JOURNAL OF THE
AMERICAN DIETETIC ASSOCIATION

VOLUME 15 April, 1939 NUMBER 4

NUTRITIONAL REQUIREMENTS AND DEFICIENCIES IN PREGNANCY[1]

MAURICE B. STRAUSS, M.D.[2]

REPRODUCTION is a normal physiologic process throughout the biologic world, and should be so considered. The common sense of the old maxim that the expectant mother must eat for two is so obvious that the type of dietary restriction which has enjoyed obstetrical popularity in recent decades seems incredible. There is little doubt but that the physiologic strain of childbearing requires dietary factors to be increased from 10 to as much as 100 per cent over the standard requirements for women. During pregnancy various conditions favoring nutritional instability are apt to arise, such as alteration in the gastro-intestinal tract secretions, disturbances of absorption, and perverted appetite as well as anorexia and vomiting. Since the nutritional states of mothers affect the well-being of infants, the health of the whole population depends to a great extent on maternal nutrition.

[1]Read at a meeting of the Massachusetts Dietetic Association, January 3, 1939, Boston, Massachusetts.

[2]From the Thorndike Memorial Laboratory, Second and Fourth Medical Services (Harvard), Boston City Hospital, and the Department of Medicine, Harvard Medical School, Boston.

At the end of the last century nutrition was largely a matter of calories. Since a pound of sugar cost but a few cents and furnished twice as many calories as a pound of beefsteak costing ten times as much, those who could afford steak might obtain their calories in this fashion as an avowed self-indulgence (so Chittenden termed it), but the less well-off majority of the population could better obtain their calories from the inexpensive carbohydrates. A decade or more passed before even the word vitamin was coined, although as far back as 1881 Lunin, working at the great physiologic school of Bunge in Basel, found that mice, fed upon an artificial mixture of the individual constituents of milk (that is, of all the constituents which were then known: namely, the proteins, fats, carbohydrates and mineral salts), failed to survive. Therefore he concluded that "a natural food such as milk must contain, besides these known principal ingredients, small quantities of unknown substances essential to life." Today we know of a dozen or more of these "unknown substances essential to life." At least six have already been isolated, their chemical formulas determined, their syntheses

accomplished in the laboratory. But if this has been done in the past quarter century may one not ask how many more accessory food factors will be discovered in the next twenty-five years? The safest method by which we can hope to include all the unknown factors is by constructing diets in which the bulk of the calories is derived from foods which have undergone little in the way of processing or purification. There can be no doubt that this is an expensive undertaking. The foods listed in table 1 are, I fear, beyond the purse of many clinic patients, most of whom will and have survived with but a fraction of this list. However, we are striving not for usual or mere subsistence nutrition but for *optimal* nutrition. Moderately inadequate diets may suffice if no untoward circumstances develop. But there is a significant difference between usual health and nutrition and optimal health and nutrition. The distribution of accessory dietary factors in the foods of table 1 is shown in table 2, and the estimated optimal requirement of each of these factors in table 3.

TABLE 1

An optimal diet in pregnancy includes daily:	
Fruit	200 gm.
Eggs (3)	180 gm.
Milk	1000 cc.
Meat, Fish or Poultry	300 gm.
Vegetables	400 gm.
Butter, sugar, cereals, breadstuffs, etc. to be added to furnish sufficient calories.	

At least 0.2 gm. (3 grains) of ferrous sulfate and 800 U.S.P. units of vitamin D should be given in addition.

Now let us turn to a consideration of the manifestations which occur from outspoken deficiency, remembering that for every instance of manifest deficiency we probably encounter ten individuals with subclinical deficiency states.

Vitamin A. A lack of vitamin A leads to epithelial metaplasia; the normal epithelial covering of the surface degenerates and is replaced by keratinizing squamous epithelium. In the urinary system this replacement of renal and bladder epithelium by keratinizing squamous cells may play a rôle in the stone formation which occurs in a considerable number of animals deprived of vitamin A. The pressure of the enlarging uterus on the ureters and renal veins certainly contributes an important mechanical factor of stasis to explain the increased incidence of urinary tract infections, such as pyelitis and pyelonephritis, in pregnancy. There is no evidence that vitamin A deficiency actually plays a rôle. However, it would be wise to eliminate this possibility by supplying pregnant women with sufficient vitamin A.

Vitamin B_1 (thiamin). The etiologic rôle of vitamin B_1 deficiency in producing polyneuritis in pregnancy is a matter of very recent knowledge, although it is probable that only medical prepossession with "toxins" prevented the recognition decades earlier that the "toxic" polyneuritis of pregnancy was a form of polyneuritic beriberi. First, it was well known that this disorder occurred almost exclusively in women who had had "pernicious vomiting" earlier in pregnancy. Certainly no condition can more easily prevent the intake and retention of accessory dietary factors. Second, these women were maintained frequently for days or weeks on concentrated purified carbohydrates. Third, even after emesis

ceased the gastrointestinal tract might remain sufficiently disordered to interfere with the absorption and assimilation of nutriment. Fourth, the clinical and pathologic picture of the "toxic" polyneuritis of pregnancy was identical with that of beriberi and, lastly, it was well known that in areas where beriberi was endemic pregnant women were frequently afflicted. Bearing these facts in mind, and also mindful that observations then in progress pointed to the conclusion that alcoholic polyneuritis was not due to the toxic effect of alcohol but to nutritional deficiency, it was a fairly simple matter to treat pregnancy polyneuritis with accessory food factors. The recovery of the patients while still carrying their babies proved the point. Today, however, the problem is not the treatment of well established cases of paralysis. We must note the first indication of the disease and—more important—recognize the type of patient particularly prone to develop polyneuritis and so treat such individuals as to prevent even the first indications. This means the parenteral administration of vitamin B_1 (thiamin) to all pregnant women who are vomiting to any extent and the oral administration of the same material and a particularly optimal diet to them, once emesis has ceased. The "toxic" polyneuritis of pregnancy is not only a curable condition, it is a preventable one.

TABLE 2

Sources of food factors

	A	B_1	B_2		CEVITAMIC ACID	D	CALCIUM	IRON	PROTEIN
			Nicotinic acid	Riboflavin					
Fruit	0	0	0	0	+++	0	0	0	0
Eggs	++	++	+	+	0	+	0	+	+
Milk	++	++	+	+++	0	+	+++	0	++
Butter	++	0	0	0	0	+	0	0	0
Meat	0	++	+++	++	0	+	0	+++	+++
Vegetable	++	+	+	++	+	0	++	++	0

TABLE 3

Requirements of food factors for optimal nutrition in pregnancy

Vitamin A	5000 International units
Vitamin B_1 (thiamin)	2 mg.
Vitamin B_2 complex	1000 Sherman-Bourquin units
riboflavin	4 mg.
nicotinic acid	100 mg. ?
Vitamin C (cevitamic acid)	100 mg.
Vitamin D	800 U.S.P. units
Calcium	2.5 gm.
Iron	30 mg.
Protein	130 gm.

A lack of vitamin B_1 may result not only in nerve changes but also in cardiovascular abnormalities. One cannot say how many of the instances of acute cardiac failure in pregnancy are due to nutritional deficiency. Further one can only guess at the rôle of thiamin deficiency in precipitating heart failure in pregnant women already known to have rheumatic heart disease in whom the combination of a damaged heart, the load of pregnancy, and improper nutrition may together be responsible.

The vitamin B_2 complex. A few of the component parts of the vitamin B_2 complex have but recently been isolated; riboflavin and nicotinic acid. As yet we do not know what the clinical manifestations of riboflavin deficiency are. We can only speculate that since it is an essential substance for many laboratory animals it probably is essential for man.

Nicotinic acid appears to be at least one substance, a lack of which leads to pellagra—a disorder of rather infrequent occurrence in this part of the world but one of the captains of the men of death in the southern states, and common abroad. In 1930 in North Carolina there were six times as many deaths from pellagra as from typhoid, four times as many as from diphtheria, and twenty times as many as from malaria, or two and a half times as many as from all these diseases combined. The lesions of the well developed case are characteristic and obvious.

However, the prodromal symptoms, as noted by Spies, are varied and not specific: loss of appetite and strength, indigestion, diarrhoea, abdominal pain, burning sensations from various parts of the body, vertigo, headache, numbness, nervousness, palpitation, mental depression, irritability, distractibility, flights of ideas, apprehension, mental confusion, forgetfulness. In the absence of the characteristic skin and mouth lesions the diagnosis of pellagra cannot be made at present; only the future will tell how many pregnant women with symptoms such as these or even with puerperal psychoses will turn out to be suffering from improper nutrition.

A lack of a substance which is closely related to the vitamin B_2 complex may lead to the relatively rare pernicious anemia of pregnancy. Recognized early and treated with nothing more than a large intake of beefsteak the condition is easily remediable. Later in the course of the disorder other treatment may be necessary. This is an example of faulty nutrition acting to spring a trap which produces a condition which diet alone does not correct, similar to the observation that pronounced weight loss may be a precipitating factor in thyrotoxicosis which then requires thyroidectomy for its relief. In the more advanced cases of pernicious anemia of pregnancy the stomach loses its ability to secrete adequate amounts of the Castle factor necessary for the proper assimilation of the food factor. Such cases may be treated by adding normal human gastric juice to be taken with the food factor or more simply with liver extract or stomach preparations.

Vitamin C. The lesions of scurvy in adults are chiefly in the skin and gums. The main source of cevitamic acid is in fruits and, to a lesser extent, vegetables. Outspoken scurvy in pregnancy is uncommon, easily recognized. There are, of course, other causes for swollen, tender, easily bleeding gums than a lack of cevitamic acid. The rather frequent

occurrence of this condition in pregnancy, however, should stimulate investigation into the possibility that a great many more cases of latent scurvy exist than we are aware of. The rôle of subclinical scurvy in postpartum hemorrhage which is not associated with uterine atony or retained placenta is entirely unknown. Certainly patients with scurvy bleed readily and show poor wound healing.

Vitamin D and Calcium. The adult form of rickets, osteomalacia, is rare in New England. In the Orient it occurs largely in pregnant women. But in Boston there is another old maxim which remains all too true: "For every child a tooth." Time does not permit a discussion of dental caries in its relationship to diet, nor is the evidence clear. However, decalcification of the alveolar processes of the jaw does occur and can result in the loosening and loss of teeth in pregnancy. The foetus is an obligate parasite; it needs calcium for its bones; if there is insufficient calcium in the maternal diet, the maternal bones must give up their store for the growing foetus. Furthermore, lactation imposes enormous demands on the mother's calcium reserves since breast milk, like cow's milk, is rich in calcium. Cow's milk is the chief source of calcium for humans. It is questionable whether any pills or wafers now available furnish as easily assimilable calcium as that of ordinary milk. This need not be grade A; we are not concerned with the fat content; in fact, we may wish the milk to be skimmed in order to reduce the mother's total caloric intake. Calcium is not properly absorbed from the gastrointestinal tract in the absence of vitamin D. Although the human can make his own vitamin D from exposure to sunlight, the amount so made by adults in Boston in the winter is probably insufficient to warrant relying on this source. Vitamin D is not to be found in quantity in even optimal diets unless supplemented with fish liver oils or irradiated products. It is therefore advisable to supplement the expectant mother's diet with at least 800 units of vitamin D daily, whether in the form of cod liver oil which is cheap or in the form of a more palatable concentrate or capsule, depending on financial rather than medical reasons.

Vitamin K. It is distinctly possible that hemorrhagic disease of the newborn may be the result of a maternal lack of vitamin K. Nothing definite has yet been established.

Iron. Unlike calcium which is most readily assimilable from natural food sources, iron is most easily absorbed when given in medicinal form, and least expensive. Iron deficiency is easily recognized. One need not wait for severe clinical symptoms and obvious pallor to develop. While it is true that one cannot measure iron reserves in the body, since most of the iron is to be found in the circulating hemoglobin, even slight grades of iron deficiency can be determined with the aid of a hemoglobinometer. Since one can recognize and measure iron deficiency so easily it is not surprising that it is found in one of four pregnant women of the clinic class and in about one of six private patients. Not all of these women have developed the deficiency during gestation. Many of them have poor or no reserves prior to conception. The deficiency, however, undoubtedly becomes intensified during pregnancy.

Iron is such a convenient substance to study that much work has been done on it, although we still heartily agree with Whipple that "iron is an elusive sprite." A deficiency of iron leads to hypochromic anemia. The average, even the optimal, diet contains but little iron, and that not in a most easily available form. The only reason that iron deficiency is not more prevalent resides in the extraordinary economy of the body which uses the iron of the worn-out red blood cells over and over again in the manufacture of new cells. If, however, there is bleeding, the iron is obviously irretrievably lost. In pregnancy and the puerperium there are two sources of major iron loss. One is the blood lost at parturition, generally not more than 300 to 500 cc., but nevertheless a loss. Secondly, all the iron that goes into the manufacture of the baby's blood is just as irretrievably lost to the mother as though there were external hemorrhage. Iron, absorbed at best with difficulty, is assimilated even less well in the presence of certain gastrointestinal disturbances, such as gastric anacidity. Ivy and others have shown that gastrectomized animals may show no anemia until they become pregnant; then practically all of them will manifest iron deficiency in the form of hypochromic anemia. This condition may be prevented in women by the administration of as little as three grains of inorganic ferrous sulfate daily during gestation. Further, by so doing, one can prevent the severer grades of iron deficiency which later affect the infant as an hypochromic anemia appearing during the second six months of life.

Protein. We come now to the last and one of the most important dietary essentials of pregnancy and, from the viewpoint of the dietitian, the most expensive. Returning again to the early days of this century, Chittenden's experiments may be recalled. These were made over relatively brief periods in the human life-span but showed that healthy adults could survive on surprisingly small quantities of protein. If nutrition has been adequate prior to such a brief period and no unusual demands are made on the organism, there is no reason that man cannot survive on a low protein intake for such a period, just as individuals in otherwise good health may be kept on an essentially iron-free diet without developing deficiency. However, pregnancy is just the state in which unusual demands are being made on the maternal organism. Just as the foetus takes the calcium and iron that it requires despite the depletion of the mother, so it must get all its protein building materials from the maternal organism. The father contributes his chromosomes and his name but very little else to the embryo. It has been assumed that one gram of protein per kilogram of body weight is the minimum requirement for normal adults. Most individuals not handicapped by economic factors take at least 50 per cent more than this. In view of the protein demands of the foetus even the figure of 130 gm. a day given in the chart may be less than optimal.

Protein in the body has been divided by Whipple into four classes, the circulating plasma protein, the labile reserve protein, the dispensable reserve protein and, finally, the indispensable fixed protein. When the protein intake is

inadequate the labile reserve protein first diminishes, then the less readily dispensable reserve protein, and the plasma protein. Until the plasma proteins begin to undergo depletion there are no recognizable manifestations of deficiency. When these become depleted, however, the balance between the intracapillary hydrostatic pressure and the colloid osmotic pressure of the blood becomes disturbed. As a result more water is filtered out of the capillaries than returns to them, leading to the excess accumulation of extra-cellular tissue fluid. Although this may quickly be manifest as edema, in many cases 15 or more pounds of excess water may be retained in the body without any evidence of visible edema. This is the usual mechanism and cause of the excessive gain in weight not uncommon in pregnancy which is likely to be associated with grave complications; the phenomenon of apparent "obesity" actually resulting from a form of starvation. In non-pregnant women, and men as well as in laboratory animals, one may affect water metabolism by altering the electrolyte balance. The lower the osmotic pressure of the plasma proteins the greater the change in water balance which a standard procedure will produce. Accordingly a group of women, all in the last trimester of pregnancy and with varying plasma protein osmotic pressures, were given 6 gm. of sodium, either in the form of 16 gm. of sodium chloride or 23 gm. of sodium bicarbonate for a period of time. Each retained water. Their weight changes, indicating changes in water balance, when plotted against the osmotic pressures of their plasma proteins, show an excellent linear correlation, and thus demonstrate the importance of the plasma proteins in the water balance of pregnancy.

The converse of these studies was also observed. Thirty women, likewise in the last trimester of pregnancy, were deprived of sodium in a simple uniform fashion by restricting them to 1500 cc. of skimmed milk daily for five days. Water was allowed freely. This diet contains only half a gram of sodium, 2 gm. each of potassium and calcium, and 53 gm. of protein. Under such a régime weight was lost by all, in inverse proportion to the colloid osmotic pressure of each individual's plasma, and again there was an excellent linear correlation. Moreover, but one to two per cent of this weight loss may be accounted for in undernutrition, the rest being water.

What effect do these changes in water balance have on the blood pressure of women with so-called "toxemia"? First, it must be stated that about 85 per cent of the women alleged to have "toxemia" as a matter of fact are suffering from vascular or renal disease essentially unrelated to pregnancy. In these individuals, there is no consistent effect on blood pressure. In contrast to this, in women with severe hypoproteinemia marked gains in weight occur together with increasing blood pressures and clinical symptoms of pre-eclampsia, such as headache, visual disturbances, vertigo, albuminuria, when sodium is administered.

Conversely, sodium depletion results in only slight water losses without altering the blood pressure of women with essential hypertension, whereas in true "toxemia" marked losses of weight occur

together with falls of blood pressure to normal.

In conclusion, one can say that many of the "toxic" manifestations of pregnancy, polyneuritis, simple anemia, pernicious anemia, pre-eclampsia, and certain cases of eclampsia among them, appear to result not from the action of mysterious and undiscovered "toxins" but from inadequate maternal nutrition, and that this may manifest itself not only in the ill health of expectant mothers but also in disorders in their infants.

OBESITY TREATMENT: RESULTS ON 212 OUTPATIENTS[1]

HORACE GRAY, M.D. AND DOROTHY E. KALLENBACH

From the Endocrine and Dietetic Departments, Stanford University School of Medicine, San Francisco

EFFICACY of some particular weight reduction cure has often been claimed on the basis of observations on a small group of patients, forming an unstated fraction of those who submitted to the cure. Occasionally efficacy has been proved by intensive study in some university hospital happily endowed with a metabolic ward, again with a selected group. Rarely has efficacy been generalized by evidence on a series treated without selection. Such quantitative evidence on an advised procedure is of value to both theory and practice. To investigators it affords a criterion which proponents of new methods may thereafter be expected to meet. To physician and patient it displays the results achieved, not merely at their best, or even on their average, but throughout their range.

For 106 unselected patients reported previously (1), it was found that diet alone reduced weight about 15 pounds in 3 months, and thereafter not much more until thyroid was added when the patient lost about 12 pounds more. The heaviest patients tended to lose the most pounds. The present purpose is to enlarge the evidence and confirm the validity of our prior report, and to consider some further practical points.

The new data concerns obese patients who attended the Endocrine Clinic from June 1933 to March 31, 1938. As before it was sifted to exclude: (1) concurrent disease, (2) growing children, who behave even more capriciously than adults under the burden of obesity; (3) outright "quitters," *i.e.* those who could not be persuaded to try treatment for at least three visits, covering one month; (4) poor cooperators, *i.e.* those whose records, quite apart from the weight column which was concealed by a strip of paper, could not by the utmost charity be called fairly faithful.

The remainder had kept their appointments with fair regularity, and made a reasonable attempt to follow advice. In some patients cooperation varied, being good in some periods and obviously poor in others; the latter periods were discarded in our prior paper, but not in this. No records were disqualified because the weight-loss was disappointing. The residuum numbered 106, which oddly enough is precisely the same as in the prior paper. Various averages were calculated and agreed with prior results within the variation to be expected by chance, as judged by the standard errors which were calculated. Accordingly the two series were pooled, and the pooled values form the basis of the following discussion.

DIET

This has followed such generally accepted practices as:

1. Protein 0.6 to 1.0 gm. per kilo body weight in adults; 2.0 to 3.0 in children.

[1] Received for publication October 10, 1938.

2. Calories 10 per kilo at the start and reduced, let us say, once a week by decreasing the carbohydrate and fat until weight is lost.
3. A common diet accordingly would be about C. 80, P. 60, and F. 40, yielding 900 calories and a FA/G ratio of .5; for a patient weighing 90 kg. (200 lb.) this would be about 10 calories per kilo.
4. The satiety value is perhaps the next thing to consider; that is, keeping the patient sufficiently satisfied so that the diet will be adhered to. This is largely achieved by increasing the bulk by means of 5 and 10 per cent vegetables.
5. Vitamins and minerals are considered by taking care to include the following in the diet: vegetables (A and B); fruits (C); about 30 gm. cheese or more if the patient will take it, or milk about 240 cc. (for calcium and phosphorus); and cod liver oil, 1 teaspoon a day (A and D).
6. Fluids are discouraged at meal-time in order to reduce the common tendency of bolting food.
7. Amount of weight lost each month is preferred to be 4 to 8 pounds, rather than larger amounts which predispose to wrinkles, irritability, and perhaps more serious upsets.
8. Bread is generally discouraged.

This diet is drastic in principle, but in practice both the dietitian and the physicians in the clinic have spent vast amounts of time in trying to stimulate patients' interest and to meet their desires by variations, and after the first month of treatment by modifications. But we believe that habits of overeating, like overdrinking and oversmoking, are seldom successfully reformed except by (1) abrupt renunciation, or (2) if the will be inadequate then only by psychiatric aid. No "tapering off" is permitted.

The specific sacrifice (bread and like products), overlooked in our prior paper, has, however, been in use since 1930 and is explained to each beginning patient somewhat as follows: "You notice this is a flour-free diet. That is, till one month from today (naming the date), which I will now write down in your record, I want you to eat no bread, neither white, whole wheat, brown, yellow, or toasted; no Melba toast, no rye wafers, no crackers, no pastry, no pancakes. It is of the greatest importance for you to make this sacrifice for 30 days; at the end of that time I will leave it to you to judge whether the flour-free diet is worthwhile. I can tell you further, that 19 out of 20 of our patients who make this trial for one month not only choose to go on without their breadstuffs but actually cease to miss them."

This seems strong medicine, but we maintain that the man or woman with obesity who just will not try a treatment *for one month* had better eat on and be happy though fat. The wastage of the war on obesity is, however, enormous.

The number of records discarded because the patient "threw up the sponge" within the month was 71, while the later loss for non-cooperation was 31, making a total wastage of 102 patients, which is *32 per cent* of the 314 records sifted. A very sad but important finding to remember.

SEX AND AGE

Ninety-nine per cent were women, averaging 43 years in age and ranging

from 20 to 70 years (at last birthday) as follows:

AGE	NUMBER	AGE	NUMBER	AGE	NUMBER
20–22	8	38–	15	56–	12
23–	5	41–	11	59–	5
26–	14	44–	18	62–	7
29–	18	47–	14	65–	4
32–	23	50–	27	68–	4
35–	16	53–	11	Total	212

The conventional statistical constants calculated from the distribution are all in the same units, stated here in years. The number of patients, "N," was 212, the mean, "M," was 43.0; standard deviation "SD," used as measure of the variability of the individual around the mean, was 12.0; the sampling error or standard error "SE," useful as measure of the variation of the mean likely to occur merely by chance if another sample were examined, was 0.8 years. Practically, we are struck by the fact that while our average obese woman was in the forties as commonly believed, a surprisingly large proportion of the series were youngish or oldish. For example, 32 per cent of the total were under 35 years, and 15 per cent, older than 55 years.

BASAL METABOLIC RATE

On principle, we advise obese patients to have a BMR; it happened that 34, *i.e.* 16 per cent, could not afford it, and were not burdened on social service since helpful findings from such studies were rare. That is to say, the mean was −3 per cent, and notably low values were surprisingly infrequent, as is evident in the following important distribution:

BMR %	NUMBER	BMR %	NUMBER
−20 to −24	10	10	9
−15 to −19	14	15	6
−10 to −14	25	20	2
−5 to −9	36	25	0
−1 to −4	30	30	1
0 to 4	24	35	0
5	20	40	1

The constants: N 178, Mean was −3.6, SD, 11.1, SE, 0.8., all in per cent. It is surprising that values of +15 per cent or higher occurred in as many as 6 per cent of the determinations, but no explanation was noted, either from a technical or diagnostic aspect.

BASAL METABOLIC RATE RELATED TO WEIGHT LOSS

In our preliminary study it was reported that there was a slight positive correlation ($r = 0.24$, which with regard to its sampling error appeared just significant); that is, as the BMR was higher the patients lost more. In the present larger series we find the correlation coefficient only .02 which is not significant. Or, if we compare the average weight loss among patients with basals of +15 per cent or higher, versus patients with basals of −15 per cent or lower, we find 25 lb. versus 21; the difference is suggestive, but may easily have been due to chance, since the standard errors of these two averages figured out at 4 and 3 lb. respectively.

INITIAL WEIGHT

The average was 202 lb. (92 kg.), and the distribution is notable for a number of weights which may seem low to be

included under obesity, but they were short people.

WEIGHT IN LBS.	NUMBER	WEIGHT IN LBS.	NUMBER
130–9	1	230–	14
140–	5	240–	9
150–	13	250–	13
160–	19	260–	4
170–	18	270–	3
180–	28	280–	2
190–	32	290–	2
200–	22	300–	0
210–	15	310–	0
220–	11	320–	1

The constants: N 212, M 202.2, SD 34.6, SE 2.4 lbs.

INITIAL OVERWEIGHT

In per cent above normal for age and height, according to the well-known Medico-Actuarial Table, as adjusted to *net* values (2), the average was 46 per cent excess. The distribution is worth record:

OVERWEIGHT %	NUMBER	OVERWEIGHT %	NUMBER
5–9	3	55–	10
10–	9	60–	19
15–	12	65–	7
20–	12	70–	8
25–	23	75–	8
30–	16	80–	6
35–	17	85–	3
40–	21	90–	2
45–	13	95–	2
50–	18	100–104	2

Constants: N 212, M 46.0, SD 22.0, SE 1.5, all in per cent.

SIZE OF DIET

At each visit the patient brought a list of foods eaten the day before, stating the approximate quantities in ounces or tablespoons. The patient is often reluctant to write out such a list and prefers to say: "But doctor, I can tell you just what I had yesterday." We hold firmly that such an oral report is more prone to omissions than a written list and further, that writing the amounts makes the patient more careful. The actual list is then calculated by the dietitian. The average was 861 calories, which at first glance may suggest that efforts to eat as advised were adequate. But the magnitude of the liberties taken is revealed by the distribution, too often omitted in statistical reports.

CALORIES	NUMBER	CALORIES	NUMBER
300–	1	1100–	5
400–	4	1200–	6
500–	16	1300–	3
600–	26	1400–	4
700–	49	1500–	2
800–	35	1600–	1
900–	35	1700–	0
1000–	24	1800	1

Constants: N 212, M 861, SD 232, SE 16. Notice the large SD, which represents a tremendous fluctuation of effort. To show this we can further calculate the coefficient of variability 100 SD/M; for most biological characters the C.V. runs around 5 per cent, though weight for sex, age and stature in normals does fluctuate about 10 per cent. Here, however, we have 232/861 = 30 per cent.

In this connection let us consider the evidence offered by Himsworth and Marshall (3). They calculated the carbohydrate, protein and fat eaten by some patients over a series of days; they expected that the figures would vary considerably, "but it is surprising how constant the results in any one patient remain." It is, indeed! Their dia-

betics give the appearance of far greater acumen or faithfulness or both, as compared with our obese, and offhand our diabetic charts show fluctuations of similar order to our obese. Even with the masking of fluctuation by averaging periods it is noteworthy how inconstant our obese are, contrasted with Himsworth and Marshall's diabetics.

LOSS OF WEIGHT

The amount lost on diet alone averaged 16 lb.; on thyroid (continuing diet of course), 13 lb.; and for the total course of treatment 20 lb.; or a loss of 16 + 13 = 29 lb., because the two stages in treatment could not in practice be carried along for all patients alike. The distribution is as follows:

WEIGHT CHANGE IN LBS.	NUMBER	WEIGHT CHANGE IN LBS.	NUMBER
65–69	2	25–	13
60–	4	20–	29
55–	4	15–	29
50–	3	10–	35
45–	5	5–9	41
40–	4	0–4	16
35–	4	1–4*	3
30–	19	5–9*	1

* Gain.

The last two items show that 4/212 = 2 per cent of our series that actually gained weight during the course of treatment. The constants: N 212, M 20.0, SD 14.9, SE 1.0, are all in pounds.

LOSS OF WEIGHT IN PER CENT OF INITIAL WEIGHT

This criterion may be preferred by some, and was therefore calculated. The average was 10 per cent, SD 6.5, SE 0.4; the distribution is omitted.

TIME ON TREATMENT

The average length of the treatment periods was: For diet alone, 190 days (6 months); for thyroid, 151 days (5 months); total course, 248 days (8 months). The first stage plus the second stage do not happen to add up to the so-called total because, as pointed out before, the groups completing the first stage, the second, and both, were in practice not identical. In setting an end to the total course for the purpose of studying the data, we took in general the date at which the patient became stationary despite our and her best efforts.

THYROID DOSAGE

The average amount of thyroid (Armour's) in grains per day during the period of administration (not the total treatment period) was calculated for each patient, and these values were sabulated to show the relative frequencies:

THYROID	NUMBER	THYROID	NUMBER
.001–	1	2.00–	17
.25–	2	2.25–	2
.50–	4	2.50–	2
.75–	1	2.75–	3
1.00–	30	3.00–	5
1.25–	5	3.25–	1
1.50–	6	3.50–	2
1.75–	11	3.75–4.00	2

The number of patients in this tabulation was 95, each represented by one average value; the grand average of the 95 individual averages was 1.79 grains (0.116 gm.), SD 0.9, SE .09 grains. Our policy was to give thyroid when the weight became stationary on diet alone, and gradually increase the dosage to

tolerance. In general, further weight was lost, and ill effects were noted in only one patient who failed to return when instructed but took the liberty, instead, of deciding to increase the dose herself.

The dosage did not show, in our material, very striking relation to the level of the BMR. For example, against the general average of 1.79 grains, we found that the patients with BMR of +15 per cent or higher (there were only 3 of these who had thyroid) averaged 1.17 grains, *i.e.* somewhat smaller tolerance as expected; and on the other hand, the patients with BMR of −15 per cent or lower (there were 19 of these who had thyroid) averaged 1.73 grains, *i.e. not* materially greater tolerance to thyroid, which was contrary to our expectation.

RATE OF LOSS OF WEIGHT

Patients after about two months often exhibit disappointment that they have not lost more pounds per visit. We are accustomed to reassure them with the argument that rapid loss is apt to make one feel weak and become wrinkled. We encourage them over and over again to believe that the treatment for obesity is not a temporary spasm followed by license, but a renunciation of old habits and attitudes toward eating, and the progressive development of permanent moderation. Two to four pounds loss a month, and persisted in, is the aim we hold before them.

Incidentally the time factor is difficult to assess because the interval between visits depends so much on the convenience of the patient. Consequently the total loss on any particular régime has seemed a better measure of effectiveness than the rate.

AFTER-HISTORY

The permanence of the weight-loss, once achieved to the patient's satisfaction—or resignation, was not discussed in the prior paper, but merits comment. There were 45 patients suitable for this analysis. During their total course their loss averaged 25 lb., *i.e.* rather better than the 20 lb. loss for the total series of 212 patients, which might be interpreted as showing superior resolution on their part. In the after-period, however, they showed on the average a *gain* of 1.2 lb. The amount is small but that is not the point; if we are successful with our patients there should be no gain. We conclude that relapse is to be expected, just as with diabetes, unless patients can be kept reporting regularly for boosts to the morale. The interval should probably not exceed 3 months.

The relative value of different kinds of treatment we have put in this order, beginning with the *least* important:

1. Endocrine treatment (a) mainly with thyroid; (b) occasionally, when hypoglycemia can be proved, with between-meal snacks of very precisely defined quantity.

2. Diet, where the insight and will power are good.

3. Consideration of the ego, its inadequacies and compensations, or perhaps reference to a psychiatrist is needed, we believe, by a large proportion of the obese. We find that other physicians agree with this impression, but have

found that no study to confirm this has been made.

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A PRACTICAL CONSIDERATION OF VITAMINS IN RELATION TO THE RESTRICTED DIET[1]

DWIGHT L. WILBUR, M.D.

Stanford University School of Medicine, San Francisco

THREE years ago I was asked to see a young woman with marked scaling of the skin of the hands and face. She was a sorry picture indeed, and to her miseries were added those of diarrhea and nervousness. Until a year previously she had been quite healthy except for occasional attacks of asthma, which had finally led a physician to place her on an elimination diet. For many months she confined her diet to a few foods only, despite the fact that she gradually lost weight and developed the characteristic symptoms of pellagra. In other words, this young woman had developed the deficiency disease, pellagra, by the long continued use of an elimination diet in an attempt to relieve her asthma. She serves as an excellent introduction for my informal talk with you on the relation of vitamins to the feeding of patients on restricted diets.

I might also mention the case of a young negro woman confined to her bed with paralyzed and swollen arms and legs and evidence of heart failure. A short time previously she had been in good health but on the advice of a friend she had decided to eat laundry starch in an effort to whiten her skin. Although she did not like the starch she rapidly became accustomed to it and soon she began to omit one food after another and to partake of a diet made up solely of laundry starch. Needless to say her complexion became lighter but this change was due to the anemia and dropsy of beriberi and not to any alteration in the pigment of the skin. Fortunately for her the paralysis and dropsy cleared up soon after an adequate diet was administered and the patient regained her health completely after having experienced a marked deficiency of vitamin B.

While these two are unusual examples of what may happen to patients who follow limited diets, nevertheless there is considerable evidence to suggest that deficiency diseases of a minor degree may not infrequently accompany the use of diets which are intended for therapeutic purposes.

Interest in the vitamins has developed by leaps and bounds. The awareness of the public regarding vitamins is largely a result of the efforts not of scientists but of advertising specialists. Indeed the modern dietitian soon may find it difficult to satisfy her patient to say nothing of her conscience if in preparing a diet she does so without full consideration of its content of vitamins and minerals.

Now if vitamins, which were first heard of only twenty-six years ago, are such an essential part of the diet, how is it possible that our ancestors were able to survive without ever having heard of them? The dietary nihilist seems to take joy in asking this question and in reminding us of the fact that many persons grew to a ripe and healthy old age without attention to such modern-day essentials as lettuce, spinach, milk,

[1]Read before the California Dietetic Association at the Fourteenth Annual Meeting, San Francisco, August 27, 1938.

orange juice and other "health foods". The answer may be found, in part at least, in the following facts. In the first place the foods used by our forebears were in one respect fundamentally different from those to which we are accustomed today: namely, they were not so extensively refined as is much of our modern food. The preparation of foods in highly concentrated and purified form such as flour, oils, "foods ready to serve" and so forth has many benefits but it also has limited the amount of food taken in the natural state, and experience has shown that foods in the natural state are highest in vitamin content. While many prepared and processed foods are equally wholesome they frequently lack something which foods contain when they are in a natural state.

This point is well illustrated by a recent investigation into the vitamin B_1 content of brown bread and of white bread and of the rations of bread consumed by soldiers and by citizens of Great Britain many years ago as compared to that consumed today. It was found that the change in character and consumption of bread alone has caused a reduction in available vitamin B_1 from 550 to less than 60 I.U. a day (500 units probably represent the physiological requirements). It was estimated that the ration of the soldier in 1670 contained 1000 I.U. of vitamin B_1 a day and that in 1782 the diet of the parish poor contained 660 to 850 units. Indeed the best fed members of the population of Great Britain today, while receiving twice as much vitamin B_1 as is received by persons with a low income, consume less vitamin B_1 than did the parish poor in the 18th and early 19th centuries.

In the second place there is probably great variability among individuals in regard to their capacity to utilize and to store vitamins and, as has been illustrated by Sherman and others, there is a wide range between minimal and optimal levels of vitamin requirements; a difference which may be expressed perhaps by that to be noted between "passable" and "buoyant" health.

Almost all of us have become conscious of our diets in recent years as a result of the economic depression or because specialists in advertising have announced to us over the radio or in the press that failure to maintain an adequate intake of this or that food containing vitamins or minerals will lead to a variety of diseases, while to those who partake of certain specified foods is promised a Utopia of health. We are constantly reminded also that many of those persons who are below par, underweight, chronically fatigued, nervous and irritable, or subject to frequent infections, suffer these symptoms as a result of vitamin deficiencies. Indeed vitamins to many persons have become the great panacea for conditions whose cause cannot adequately be explained, and many patients come to their physician already having used vitamins and vitamin concentrates as one of several self-administered therapeutic measures.

THE LIMITED DIET

If in this day of prepared foods there is any question about maintaining an adequate intake of vitamins among those members of society whose dietary intake is an unlimited one, it seems obvious that considerable thought must be given to the problem of maintaining at adequate levels the vitamin content of a diet which must be limited because of the

condition or circumstances of the patient.

There are four cardinal factors which it is essential for the dietitian to remember at all times in preparing a therapeutic diet if she is to attain the goal of all diet therapy which is, of course, the maintenance of adequate nutrition, good health and the prevention of deficiency diseases. These four factors are a knowledge, first, of the vitamin requirements of man; second, of the vitamin content of foods; third, of the capacity of the patient to digest comfortably and adequately the food which he is given; and fourth, of the ability of the patient to obtain the foods suggested.

It seems unlikely that the quantitative requirement of any of the vitamins will be clearly established for some time, for variability in minimal and optimal requirements and in absorption from the digestive tract and in storage, utilization and destruction of the vitamins is sufficient under normal physiological conditions to make it difficult to express in exact figures the requirement for any particular vitamin.

Perhaps one might express the requirement for vitamins in the same way as it is expressed for proteins: namely, since there is no definite figure which can be established as the optimal requirement for protein, the requirement probably is not fixed but variable.

Despite the limitations which have been placed on our ability to state in figures the requirement of the vitamins, enough data has been obtained to permit certain approximations and I pass them on to you with the hope that they will be considered approximations subject to wide revision and not as fixed unalterable facts. The following values are for normal adult men and women:

Vitamin A. The daily optimal requirement of vitamin A is probably in the neighborhood of 6000 to 10,000 I.U.

Vitamin B_1 (thiamin chloride). The daily requirement for vitamin B_1 is probably in the neighborhood of 500 I.U., or 1 to 2 mg. of thiamin chloride. As Cowgill has shown, the need varies with the weight and the total metabolism of the organism.

Vitamin B complex (other than B_1). The factors which compose this part of the complex are only partly known. At least two of them are necessary for man. Nicotinic acid and riboflavin have been recognized as components of the vitamin B complex but the daily requirement of these substances has not been fully demonstrated.

Vitamin C. The daily requirement of vitamin C is probably in the neighborhood of 40 to 100 mg. ascorbic acid.

Vitamin D. The daily requirement of vitamin D is unknown. For infants 1000 to 1250 U.S.P. units daily (administered as viosterol) is efficacious in preventing rickets; for adults the requirement is unknown but it is probably small.

The daily requirement of other apparently essential foodstuffs such as vitamins E and K is unknown.

The requirement for vitamins is influenced considerably by such physiological processes as pregnancy, lactation and growth and by such abnormal conditions as fever, infections and elevation of the basal metabolic rate.

VITAMIN CONTENT OF FOODS

While the vitamin content of foods fluctuates to some extent, depending on

such factors as the season of the year and the geographic location in which the food containing vitamins is grown or produced, nevertheless fairly satisfactory quantitative measurements have been made of the vitamin content of many foods. An excellent compilation of such studies is that of Daniel and Munsell entitled, *Vitamin Content of Foods.*

THE CAPACITY OF THE PATIENT TO UTILIZE COMFORTABLY AND ADEQUATELY THE FOODS WHICH ARE GIVEN

Many of us are apt to be so absorbed in seeing that the patient gets "the right things in the diet" that little attention is paid to such an important matter as the digestibility of the foods that carry the desired vitamins and minerals. All of us can recall innumerable patients who in an attempt to "get their vitamins" ate large quantities of rough and raw vegetables and fruits with resulting indigestion, abdominal discomfort and irritability of the colon.

Not infrequently when a patient protests that he is unable to partake of a certain food, he is likely to be told impatiently that the trouble is in his head and that he must do as he is told. However, it is well to remember that many such complaints are justified and that foods such as milk and eggs which are thought to be simple and easily digested may cause indigestion in sensitive or allergic individuals. As Dr. Alvarez has said, many dietitians could profit from conversion to the view that *digestibility* of a food may at times be much more important to a patient than is its content of vitamins, calories or iron.

ABILITY OF THE PATIENT TO OBTAIN FOOD WHICH IS PRESCRIBED

Foods which are high in vitamin content are in general expensive because they must be fresh and this freshness not infrequently requires special care, transportation and refrigeration which add considerably to the cost of marketing. Physicians and dietitians must use great care therefore in planning diets for patients whose economic state is such that the purchase of large quantities of butter, milk, eggs, meats and certain vegetables is prohibited. Under such circumstances it is well to give considerable thought to the vitamin content of some of the less expensive foods noted in the tables of Daniel and Munsell.

CAUSE OF VITAMIN DEFICIENCIES OTHER THAN AN INADEQUATE DIET

It is commonly believed that vitamin deficiency diseases occur only when the diet is inadequate. While this probably is the most common cause of deficiency diseases there may be other factors leading to their development, such as an increased demand for vitamins during pregnancy, during fever, and when the basal metabolism is increased. Loss of or destruction of vitamins after ingestion, and abnormalities in the function of the digestive tract, may also lead to vitamin deficiency diseases. During pregnancy and lactation the need for certain vitamins may be increased from 10 to 100 per cent, or even more, above the requirement for the normal person.

Vitamin deficiency states should be looked for particularly among those patients who have been on an inadequate diet in an attempt to reduce weight or because of chronic alcoholism, economic

difficulties, faddism, or poor therapeutic dietary advice.

TYPES OF DIETS MOST LIKELY TO PRODUCE VITAMIN DEFICIENCY

During the past generation, physicians who gave their patients dietary advice usually told them what *not* to eat and in avoiding one food after another the patient often ended with a very limited diet. The modern physician, with a more adequate knowledge of nutrition, usually advises his patient what he *should* eat and is careful to include foods which supply essential vitamins. Nevertheless many patients, either as a result of self-administered diets or because of poor advice, partake of an inadequate diet. The two conditions which most commonly lead to such a situation are obesity and digestive disorders. However, long continued elimination diets and diets for diseases of the heart and kidneys, for high blood pressure and for other conditions occasionally lead to deficiency states.

Methods of weight reduction by diet are constantly being revised. In essence they are simple and depend on reducing the caloric intake below the needs of the individual. The Hollywood diet and the "eighteen day" diet have become outstanding examples of the diets for rapid weight reduction. There is no doubt that such diets reduce weight but they also are apt to reduce the nervous reserve and vitality largely because they are inadequate in vitamin and mineral content. I have seen many patients with "nervous breakdowns" which could be attributed to the use of such reduction diets. I recall a young woman whom I saw some years ago who weighed 90 pounds and was thin and fragile, who had severe diarrhea, marked anemia and gastric ulcer. Previously she had weighed 180 pounds and was healthy and active in her work. She had decided that it was necessary to lose weight and in an attempt to do so had markedly limited her diet. It was not unusual for her to have coffee for breakfast, a candy bar at noon and a dish of clear soup at night. She lost weight but she also wrecked her health and like Humpty-Dumpty" all the king's horses and all the king's men could not put her together again".

All of us are familiar with the chronic dyspeptic who gradually narrows his diet to three or four foods or who may finally be reduced to tea and toast. One food after another is eliminated because presumably it is the cause of dyspepsia. Finally, after years of self-directed semi-starvation, the patient sees a physician who prescribes an adequate diet and gives the patient relief.

Among other not uncommon offenders is the food faddist whose ideas of foods arise largely from reading pseudo-scientific literature, the eccentric who is similarly misinformed, and the economic failure who is unable to pay for the right kind of food even though he were exceptional enough to know what it should be.

THE USE OF VITAMINS IN RESTRICTED DIETS

In the midst of all the advertising of the virtues of the various vitamins and of the necessity of using them in concentrate, synthetic or "shot-gun" form, it may be somewhat difficult to keep one's balance. After all, vitamins are foods and not drugs and it has been well said that the grocery store is more important

than the drug store in the prevention and treatment of vitamin deficiency states. May I not re-emphasize this viewpoint and stress the fact that most persons who partake of an adequate mixed diet need have little concern about vitamins or deficiency diseases.

In essence, vitamins may be administered in three forms: in the natural state such as in foods; in the form of concentrates or very rich natural sources such as cod liver oil or yeast; and in pure crystalline or synthetic form such as thiamin chloride, or in a combination of these forms.

In what types of diet must particular care be given to the vitamin content of foods? Chiefly, in diets for weight reduction, in diets for digestive disturbances, in elimination diets, in diets for lactating and pregnant women, in diets for patients who have chronic heart and kidney disease, in diets of growing children and in diets of patients with long standing chronic infections such as tuberculosis. The vitamin content of foods needs careful consideration also, of course, in deficiency diseases, and for those who are underweight or physically below par.

Just what procedure should dietitians follow in preparing a restricted diet? The first factor of importance is that vitamins should be supplied if possible in their natural state, namely, in foods. This is especially important because of certain other essential substances present in food whose functions may be closely interrelated with the vitamins, and of which at present we may be only vaguely aware. Consequently the dietitian should use all of her ingenuity and knowledge of foods so that the diets she outlines may supply vitamins to more than meet the requirements as they are now known.

If it is not possible to obtain an adequate intake of vitamins from the foods in the diet, even from very rich natural sources, and particularly if the diet is one which must be followed for a month or more, then it will be wise to supplement it with concentrates of vitamins or synthetic sources.

If a vitamin deficiency exists, it will more than likely be due to a deficiency of components of the vitamin B complex and of vitamin C. Almost all diets ordinarily used therapeutically contain vitamin A in at least fair amounts and adults usually do not need any supplementary vitamin D.

Such supplements as haliver and cod liver oil for vitamin A (in preference to carotene), brewer's yeast, wheat germ or liver extract for vitamin B, citrus fruit juices or tomato juice for vitamin C, and cod liver oil and viosterol for vitamin D, have proved satisfactory. How much should one give of these substances? This depends largely on the limitations of the diet and on the requirements of the individual. At least the total vitamin content of the food and supplements should meet the currently accepted standards for vitamin requirements.

Two teaspoons of cod liver oil a day will meet the vitamin A requirement provided the oil meets the standards stated in *New and Non-official Remedies 1936* of the American Medical Association. Such cod liver oil in the dosage stated should contain at least 6250 and not over 10,000 I.U. of vitamin A. Haliver oil in doses containing a similar number of units of vitamin A is probably a more pleasant substitute. Carotene

is less readily absorbed from the digestive tract.

Very rich concentrates of the vitamin B complex from natural food sources which have proved most satisfactory are brewer's yeast, wheat germ and liver extract (vitamin G or B_2 only). "Vegex" and "Embo" are two forms in which the B complex is marketed commercially. The various concentrates of the B complex may be taken in tablet form or added to foods such as cereals or beverages. In such concentrates the content of vitamin B_1 or thiamin chloride is usually expressed in terms of international units or milligrams of the pure substance and that for vitamin G or B_2 in terms of Sherman-Bourquin units. I heartily approve of the addition of very rich natural food sources or concentrates of vitamin B complex to the diet of almost all patients on restricted diets because of the likelihood, previously stated, that any existing deficiency will be due to a shortage of the vitamin B complex. Innumerable proprietary preparations are available in globule, capsule and tablet form which contain concentrates and synthetic preparations of most of the known vitamins, either separately or in combination.

The last factor of importance in supplementing the diet is the use of synthetic vitamin preparations of the pure chemical substance itself. Vitamin B_1 (thiamin chloride), vitamin B_2 complex (riboflavin and nicotinic acid), vitamin C (ascorbic acid) and vitamin D (viosterol) are now on the market. While these synthetic products may be useful in therapy and in the management of patients on diets which are inadequate in vitamin content, in my opinion they should be resorted to only when foods and the usual vitamin concentrates need further supplementation. The reason for this, as I have already mentioned, is that food and concentrates of the natural sources of vitamins doubtless contain other essential substances which have not yet been synthesized. At times it may be advisable to give synthetic or crystalline preparations intramuscularly, particularly when conditions of the digestive tract interfere with absorption.

When viewed from the standpoint of pre-vitamin days, the uninitiated may well wonder if all this concern over vitamins and the balanced or adequate diet is worthwhile. For peoples did survive without benefit of our modern nutritional knowledge. Yet even our forebears recognized the importance of food as is witnessed by the old adage, "Tell me what you eat, and I will tell you what you are." The white rat has supplied convincing experimental proof of the advantages of applied modern nutritional knowledge. During the period of twenty years from 1906–1926, under conditions that were not varied except for improvement in ration, the normal standard rate of growth of the albino rat trebled and the standard weight for the species doubled. So far as the human race is concerned, evidence is supplied by the unusual growth of European and Oriental immigrants in countries where life under improved nutritional conditions is possible. Indeed, while the potentialities of the human race for increases in longevity and improvement in vitality and vigor cannot yet be fully estimated, it must be admitted that these are great under the continuation of ideal conditions of nu-

trition. The surface, in reality, has barely been scratched.

WHAT WILL THE DIETITIAN OF THE FUTURE KNOW ABOUT VITAMINS?

The dietitian of the future will know the vitamin content of foods just as she now knows their content of protein, fat, and carbohydrate. And instead of saying that eggs are a good source of vitamin A she will say that an egg contains so many milligrams of the pure substance itself. Indeed we are moving rapidly from a position of familiarity only with the *qualitative* vitamin content of foods to one of *quantitative* vitamin content and this change in many respects will revolutionize the practice of dietetics. The dietitian of the future will be more and more concerned with such interesting problems as the quantitative values for the essential amino acids, the minerals, and the vitamins—the "little things in nutrition".

SUMMARY

In summary, may I emphasize that the four important factors with which every dietitian should be familiar when considering problems related to the adequate nutrition of the patient and particularly for those on limited diets are: the vitamin requirements of man; the vitamin content of foods; the capacity of the patient to digest comfortably and adequately the food which he is given; and the ability of the patient to obtain the foods which it is suggested that he eat. While the dietitian need not assume full responsibility in all of these matters, nevertheless her knowledge in these respects will be invaluable if she is to carry out orders intelligently and thus cooperate advantageously with the physician. Only then will she be of the greatest service to the patient and to her profession.

LABOR POLICIES IN COLLEGE RESIDENCE AND DINING HALLS[1]

GRACE M. AUGUSTINE

Institution Management, Texas State College for Women

THE institution manager today recognizes the importance of the proper selection, training, and supervision of employees. The former involves job specifications resulting from a thorough job analysis for each position if the right person is to be chosen. Manuals of work and standardized directions aid in the essential training on the job, whereas comprehensive check lists are valuable in the supervision of the work.

The labor policies and practices in the institution form a part of the job analysis. These largely determine the type of worker applying for the job and the attitude of the worker toward his job. The wages and hours of work are the essential items in the eyes of the applicant which make the particular position desirable or not. Supplementary to these are the policies relating to welfare provisions. These last seldom compensate for low wages and long hours; instead, the findings of this study indicate that labor policies are generally consistent.

This is the report of the labor policies in practice March 1937 in 74 colleges and universities which cooperated in this project of the Administrative Section of the American Dietetic Association. Information was submitted for 1215 regular full-time employees working in 123 dining halls and for 720 house department employees in 140 residence halls. (Full-time is defined as over four days' work a week with a total of 30 hours or more a week. Exception is made where the spread of hours or wages warrants it.)

Inasmuch as the same questionnaire was used for both hospitals and colleges, a number of the positions listed in the job classification are not pertinent to this report but are peculiar to hospital dietary departments. (The complete job classification appears in the hospital report (1).) The individual data for each position is summarized in the following charts. These data are compiled according to the geographical location of the institution, the sex and race of the worker, and the size of the unit. The subdivisions according to size are those used in a previous study (2) namely: 0–99, 100–199, 200–299, 300–399, and 400+ for food units and 0–99, 100–199, and 200+ for house units. The average numbers served in these size groups are 55, 142, 238, 345, and 637 in the foods groups and 46, 138, and 346 in the house groups. These sizes vary somewhat from those in the hospital report (1), although the other divisions in the charts and the type of information included are identical.

A comparison of wages shows that the highest average wages occur most frequently in the East and the lowest in the South. In the divisions according to race and sex, white men generally receive highest wages with negro men second, white women third and negro

[1] Presented before the Administration Section, American Dietetic Association, Milwaukee, October 12, 1938.

women fourth. When employees live out but receive their meals, white women occasionally shift to first or second place. The correlation between wages and the size of the unit noted in the two previous studies does not follow consistently in this report. Though the values of maintenance correspond, the average cash wages with full maintenance provided seldom show the legitimate decrease of $2.50 a week as compared to those with meals only, or a decrease of $7.75 as compared to those not receiving any maintenance in addition to the cash wage.

Since the hours of work and wages for the individual positions are discussed in detail in the earlier report (1) and comparisons made with other studies, present comments on the information presented in the charts will be limited to a comparison between the employees of colleges and hospitals. In general, the averages for wages and hours correspond rather closely for the total groups. The wage range found in this study, however, seldom drops as low as in some of the hospital positions. This advantage is offset somewhat in that the spread of hours, and the hours worked per day and per week show a higher range for almost every position. Another noticeable disadvantage is that colleges and universities apparently are not adopting the straight eight-hour day and six-day week as readily as the hospitals. The full day off per week occurred most frequently in all the hospital positions with but two exceptions and in one of these (general laundry work) a day and a half off duty per week ranked first with the full day second. Forty-three per cent of these employees receive a full day or more off duty each week as compared with 34 per cent of the employees in the college group.

It is evident from the replies that no standardized method is in use for estimating the cost of furnishing maintenance to employees. The value placed on single rooms varies from $3.85 to 47¢ a week, averaging $2.23; and on double rooms (per occupant) from $3.85 to 70¢ or an average of $1.95 a week. These averages are lower than those in a previous college study (2) of $2.61 for single and $2.33 for double rooms and in the hospital report (1) of $2.88 and $2.73 respectively. These averages from such a large number of institutions indicate that the rate of $2.50 per week set by the hotel and restaurant codes may be considered a fair allowance. In these college food departments 64 per cent of the employees live out, 24 per cent live in single rooms and 12 per cent in double rooms in the institutions. In the house departments, 72 per cent live out while 19 per cent have single rooms provided and 7 per cent, double rooms. These percentages correspond to the earlier study (2) where 65 per cent and 73 per cent of the employees in the respective departments live out.

Though the majority of the employees live out, 87 per cent in the food units receive 3 meals a day in addition to the cash wage and 10.5 per cent receive 2 meals. Twenty-eight per cent of the housekeeping department employees, however, receive no maintenance and an equal number of these workers, 1 meal. Only 35 per cent of this group are given 3 meals a day. The estimated value of breakfast and dinner corresponds closely to the hospital figures (1) while the supper value is higher. These average 79¢ for the 3 meals and

21¢, 34¢ and 31¢ when each meal is valued separately. The restaurant and hotel codes have set an evaluation of 25¢ per meal which is used rather generally and considered reasonable. Twenty states have stipulated that 15 minutes to 1 hour must be allowed for meals or rest (3). The time allowed for meals in this study ranges from 15 minutes to 1 hour and 15 minutes per meal, with an average of 26 minutes for breakfast, 33 for dinner and 28 for supper. One-half hour is the mode for each meal.

Uniforms are laundered for 74 per cent of the employees in the food units as against 35 per cent in the house units. Ten per cent in the first group and 5 per cent in the second have personal laundry service included. Approximately one-third of the institutions supply the women's uniforms, two-thirds the women's aprons and men's coats, and four-fifths the men's aprons. Trousers are furnished for the men in a few colleges. Bryan (4) suggests the necessity of establishing some limits to the size of the employees when uniforms are furnished. It is not practical for the institution to carry all sizes of uniforms. If the institution provides and launders the uniforms, the manager sets the standard desired and is in a position to control the situation. A higher standard for cleanliness may be expected under these conditions as they permit a definite time schedule for exchanging soiled and clean uniforms. If each employee is responsible for keeping her own uniforms clean, the tendency is to try to prolong the intervals between laundering and to do it irregularly at her convenience. Where employees are charged for laundering their uniforms, Byrne (5) reports in the restaurant and hotel study a cost ranging from 15¢ to $2.50 a week for this service. The expense of these uniforms is seldom as great nor the style as individual for the employees of non-profit making institutions when compared to those in hotels and restaurants. Atmosphere and keen competition in the commercial units may require uniforms and accessories which are suitable in that one situation only. The present day practice of attracting trade by frequent redecorating places a heavy financial burden on the employee if it involves discarding old uniforms and adopting a new style, unless the uniforms are furnished. There is no definite standard regarding this policy but it is encouraging to find the non-profit making institutions in line with public opinion to this extent.

West and Wood (6) recognize the health and safety of the employee, the observance of state and local labor laws, the establishment of sound welfare policies and the maintenance of clean and sanitary conditions in the service as major responsibilities to be assumed by a food service for the employees. With the majority of the employees living outside the institution, the necessity for rest rooms and lockers is increased. Eighty per cent of the institutions furnish rest rooms for their employees. The most frequent ratio reported of toilet and lavatory fixtures per employee is 1 to 5 for each type of fixture. This ratio is the same for both men and women employees. Forty-five per cent of the replies to this question showed that lockers were provided and 60 per cent of these lockers have keys or combinations. The ratio is 1 locker per employee in 54 per cent of the institu-

Head Cook

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0–99	100–199	200–299	300–399	400–	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	28	21	33	35	7	62	22	26	20	38	24	18	17	117
Average cash wage per week	19.62	17.75	16.78	28.57	13.36	18.74	22.49	27.87	21.46	18.57	24.45	18.09	24.59	21.09
Cash wage in addition to full maintenance:														
Average	19.38	17.79	13.24	29.68	25.00	19.75	28.29	24.64	25.93	16.70	28.05	21.17		22.42
High	29.17	24.50	23.33	45.00	25.00	29.17	35.00	45.00	45.00	29.17	40.83	35.00		45.00
Low	14.00	10.50	9.33	16.33	25.00	9.33	19.83	10.00	12.13	9.33	16.33	10.00		9.33
Number of employees	14	9	9	23	1	31	8	15	13	20	14	8		55
Cash wage in addition to meals only:														
Average	19.86	17.72	18.10	26.24	11.42	17.73	19.18	32.71	13.15	20.77	19.42	15.62	24.59	19.90
High	37.33	30.00	52.00	54.33	15.17	30.00	37.33	54.33	19.83	40.83	50.00	22.20	54.33	54.33
Low	15.24	8.00	9.00	12.50	8.00	8.00	10.50	13.50	8.00	9.00	10.00	10.50	10.15	8.00
Number of employees	14	12	24	11	6	31	14	10	7	17	10	10	17	61
Cash wage without maintenance:														
Average														
High														
Low														
Number of employees														
Spread of hours in schedule:														
Average	10.65	10.96	11.16	11.09	11.86	10.93	11.08	10.77	12.11	10.80	10.59	10.88	10.65	10.98
High	14.00	13.00	14.00	14.00	13.00	14.00	14.00	13.00	14.00	14.00	13.00	13.00	13.00	14.00
Low	8.00	6.00	8.00	8.00	10.00	6.00	8.00	8.00	8.50	6.00	8.00	8.00	8.50	6.00
Hours worked per day:														
Average	8.05	8.75	8.75	9.06	8.57	8.61	8.86	8.65	9.28	8.36	8.62	8.31	8.94	8.66
High	10.00	11.00	12.50	11.75	10.00	12.50	10.00	10.50	11.75	11.00	10.50	10.00	12.50	12.50
Low	6.50	6.00	7.00	7.50	8.00	6.00	7.00	8.00	8.00	6.00	7.50	7.00	8.00	6.00
Hours worked per week:														
Average	48.36	53.46	54.40	54.66	52.43	52.35	55.32	52.04	58.40	50.66	50.84	50.33	56.59	52.85
High	60.00	73.50	81.00	76.00	63.00	81.00	66.50	73.50	76.00	66.00	73.50	65.00	81.00	81.00
Low	39.00	40.00	40.00	37.50	40.00	37.50	48.00	48.00	40.00	39.00	37.50	40.00	48.00	37.50
Time off (most frequent):														
1 Day each week	24	4	1	11		28	8	4	1	18	11	6	4	40
½ Day each week	2	2	9	4	2	6	3	6	2	6	2	5	2	17
½ Day each week plus ½ day alternate weeks		2	1	12	1	11		3	12	2	1			15
2 Half days each week	1	5	6		2	7	2	1	4	2		4	2	12

Assistant Cook

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0–99	100–199	200–299	300–399	400–	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	32	20	44	40	6	69	28	33	17	37	28	20	34	136
Average cash wage per week	14.68	13.10	12.18	17.92	12.78	13.27	14.22	18.01	14.61	14.47	15.41	12.18	15.36	14.57
Cash wage in addition to full maintenance:														
Average	14.36	10.62	8.40	16.47		13.23	17.50	18.26	15.62	13.16	16.04	14.00	16.33	14.80
High	19.83	16.33	8.75	28.00		19.83	17.50	28.00	25.00	23.33	28.00	17.50	16.33	28.00
Low	11.67	7.47	7.69	10.00		7.47	17.50	11.67	10.00	7.47	9.33	8.75	16.33	7.47
Number of employees	13	4	3	25		30	6	9	13	14	12	5	1	45
Cash wage in addition to meals only:														
Average	14.91	13.72	12.46	20.51	12.78	13.31	13.32	17.91	11.33	15.30	14.94	11.57	15.33	14.45
High	29.17	17.50	30.00	41.01	19.00	18.00	29.17	41.01	12.83	16.00	30.00	18.00	41.01	41.01
Low	10.50	9.33	6.00	12.50	9.50	7.00	7.00	6.00	9.33	7.00	9.33	9.00	6.00	6.00
Number of employees	19	16	41	14	6	39	22	23	4	22	16	15	33	90
Cash wage without maintenance:														
Average														
High														
Low														
Number of employees														
Spread of hours in schedule:														
Average	10.64	10.73	11.36	11.48	12.08	11.11	10.90	11.32	12.87	10.98	10.60	10.64	11.26	11.16
High	14.00	12.75	13.50	14.00	12.50	14.00	14.00	13.00	14.00	13.00	13.00	12.50	13.50	14.00
Low	8.00	6.00	8.00	8.00	12.00	6.00	8.00	8.00	12.00	6.00	8.00	8.00	9.00	6.00
Hours worked per day:														
Average	8.03	8.38	9.03	9.03	8.83	8.56	8.75	8.87	9.56	8.30	8.66	8.08	9.00	8.69
High	10.00	10.50	12.50	11.75	9.50	12.50	9.50	12.50	11.75	10.00	10.50	9.50	12.50	12.50
Low	7.50	6.00	7.00	8.00	8.00	6.00	7.00	8.00	8.00	6.00	7.50	7.00	8.00	6.00
Hours worked per week:														
Average	48.23	51.22	57.10	56.48	54.83	52.42	56.30	55.06	60.41	51.77	52.31	48.82	57.51	53.96
High	60.00	73.50	81.00	76.00	57.00	81.00	66.50	81.00	76.00	67.00	73.50	66.00	81.00	81.00
Low	40.00	46.00	35.00	48.00	52.00	35.00	48.00	40.00	48.00	46.00	43.00	35.00	48.00	35.00
Time off (most frequent):														
1 Day each week	25	9	1	13		34	7	7	3	13	15	6	11	48
½ Day each week	1	2	9	8	2	7	4	7	1	2	4	7	6	20
½ Day each week plus ½ day alternate weeks		1	1	12		11		3	12	1	1			14
1 Day alternate weeks, ½ day alternate weeks		2	6		1	2	5			1	3		4	8
2 Half days each week	1	1	5		2	5				2		3	2	7

General Kitchen Worker

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0–99	100–199	200–299	300–399	400–	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	25	12	68	33	5	59	32	42	17	41	18	20	42	138
Average cash wage per week	12.32	11.55	7.34	13.19	7.57	9.64	8.74	11.77	9.24	8.02	13.19	9.19	11.28	10.00
Cash wage in addition to full maintenance:														
Average	11.38	12.44	6.14	11.92		7.58	10.89	10.66	10.63	6.48	15.12	9.40	14.58	9.08
High	15.17	21.00	8.75	17.50		11.50	12.83	21.00	12.83	12.83	21.00	11.67	15.17	21.00
Low	8.17	7.00	4.67	9.50		4.67	7.00	5.83	9.50	4.67	10.50	6.53	14.00	4.67
Number of employees	8	3	29	20		31	3	26	10	30	8	10	2	60
Cash wage in addition to meals only:														
Average	12.76	11.25	8.23	15.14	7.57	11.92	8.52	13.57	7.25	12.21	11.64	8.98	11.12	10.72
High	15.17	14.00	10.50	16.63	8.00	16.63	13.50	15.52	11.40	15.00	15.17	12.35	16.63	16.63
Low	11.67	4.94	5.00	11.40	5.83	4.94	5.00	8.17	5.00	5.83	7.88	7.47	4.94	4.94
Number of employees	17	9	39	13	5	28	29	16	7	11	10	10	40	78
Cash wage without maintenance:														
Average														
High														
Low														
Number of employees														
Spread of hours in schedule:														
Average	10.38	11.29	10.24	11.02	10.10	10.54	10.46	10.64	12.01	10.54	10.17	9.61	10.37	10.53
High	13.00	14.50	13.00	13.00	12.50	13.50	13.00	14.50	13.00	12.50	14.50	12.00	13.00	14.50
Low	8.00	9.00	8.00	8.50	9.50	8.00	10.00	8.00	10.00	8.50	8.00	8.50	9.00	8.00
Hours worked per day:														
Average	8.16	8.40	8.54	8.42	8.90	8.29	8.52	8.46	8.60	8.46	8.24	7.57	8.68	8.42
High	9.00	10.75	12.00	11.25	9.00	12.00	10.00	10.75	10.00	9.00	10.75	8.00	12.00	12.00
Low	7.50	6.00	7.00	6.50	8.50	6.00	8.00	7.50	6.00	8.00	7.50	7.00	8.00	6.00
Hours worked per week:														
Average	48.16	52.19	53.02	53.61	64.40	48.87	56.05	52.53	54.96	50.61	49.19	44.10	57.82	52.21
High	54.00	75.25	80.00	72.75	66.50	80.00	67.00	75.25	63.00	60.00	75.25	52.00	80.00	75.25
Low	40.00	42.00	35.00	39.50	56.00	35.00	48.00	43.00	42.00	48.00	43.00	35.00	48.00	35.00
Time off (most frequent):														
1 Day each week	24	5	3	10		23	2	17	1	17	12	4	8	42
½ Day each week		1	29	11		14	8	19	1	21	9		10	41
½ Day each week plus ½ day alternate weeks		1		11		10		2	10	1	1			12
2 Half days each week		3	5		1	4	1	2	1	2	1		4	8
1 Day alternate weeks			6		4		2						6	6

Pantry, Counter, Salad, Dessert Worker

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0-99	100-199	200-299	300-399	400-	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	48	25	43	53	11	133	17	8	15	34	62	18	40	169
Average cash wage per week	12.50	10.22	10.48	11.91	10.13	11.54	11.25	12.66	10.30	12.11	12.15	9.36	11.23	11.46
Cash wage in addition to full maintenance:														
Average	11.60	9.49	7.09	11.29		10.76	14.00	14.00	10.31	11.11	11.79	7.32	14.00	10.96
High	14.00	14.00	9.33	15.17		15.17	14.00	14.00	12.50	15.17	14.00	10.50	14.00	15.17
Low	9.33	7.00	6.53	9.00		6.53	14.00	14.00	9.00	7.00	9.33	6.53	14.00	6.53
Number of employees	17	3	5	39		60	2	2	15	16	27	5	1	64
Cash wage in addition to meals only:														
Average	13.00	10.32	10.92	15.12	10.13	12.22	10.87	12.04		13.04	12.58	10.15	11.16	11.78
High	17.50	15.17	22.50	17.50	14.00	22.50	15.75	13.00		18.75	22.50	13.85	17.50	22.50
Low	8.75	6.00	5.40	12.83	7.47	5.40	8.75	9.33		6.00	7.88	7.47	5.40	5.40
Number of employees	31	22	38	8	11	69	15	4		17	30	13	39	99
Cash wage without maintenance:														
Average				11.55		11.31		12.50			11.55			11.55
High				12.50		12.50		12.50			12.50			12.50
Low				10.00		10.00		12.50			10.00			10.00
Number of employees				5		4		1			5			5
Spread of hours in schedule:														
Average	10.84	10.79	10.82	10.98	10.50	10.92	10.51	11.53	11.80	11.14	11.23	10.17	10.06	10.88
High	14.00	13.75	13.00	13.50	12.00	13.50	14.00	13.75	13.50	14.00	13.75	12.50	13.00	14.00
Low	6.50	6.00	8.00	8.00	8.00	6.00	8.00	8.50	8.50	6.00	8.00	6.50	8.00	6.00
Hours worked per day:														
Average	7.88	8.78	8.66	8.67	8.57	8.41	8.50	9.11	9.47	8.21	8.49	7.86	8.50	8.46
High	9.00	10.75	12.00	11.00	9.50	12.00	9.50	10.75	11.00	10.00	10.75	9.50	12.00	12.00
Low	6.00	6.00	7.00	7.50	7.00	6.00	7.00	8.00	7.50	6.00	7.50	6.00	7.25	6.00
Hours worked per week:														
Average	45.63	53.22	56.19	52.40	52.55	50.89	54.12	58.89	60.37	49.09	51.85	47.00	52.45	51.66
High	54.00	75.25	80.00	74.50	63.00	80.00	66.50	75.25	74.50	63.00	75.25	63.00	80.00	80.00
Low	30.00	36.00	45.00	37.50	45.00	30.00	48.00	46.00	46.50	36.00	37.50	30.00	45.00	30.00
Time off (most frequent):														
1 Day each week	37	4	8	27		69	3	4	1	22	40	1	12	76
½ Day each week plus ½ day alternate weeks		2	8	16		24		2	14	2	10			26
2 Half days each week	4	4	7		1	10	4			5		2	8	15
½ Day each week		2	6	4	2	8	2			1	4	4	3	12
½ Day alternate weeks		11	1		5	4	3					1	11	12

Dish, Glass, Silver, Pot Washer

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0–99	100–199	200–299	300–399	400–	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	34	13	79	36	2	24	67	69	8	26	36	25	67	162
Average cash wage per week	13.05	11.46	8.82	11.75	9.50	11.12	9.37	11.58	10.90	11.42	11.40	10.39	9.82	10.57
Cash wage in addition to full maintenance:														
Average	12.33		8.92	11.54		9.33	11.83	12.07	10.78	11.52	11.83	11.85		11.55
High	12.83		12.00	14.00		10.00	14.00	14.00	13.50	12.83	14.00	12.25		14.00
Low	11.67		5.83	8.50		8.50	5.83	10.50	9.50	5.83	8.50	11.67		5.83
Number of employees	7		2	26		6	7	22	7	8	15	5		35
Cash wage in addition to meals only:														
Average	13.24	11.46	8.82	12.29	9.50	11.71	9.08	11.36	11.67	11.38	11.10	10.03	9.82	10.30
High	23.33	17.50	16.00	15.52	10.00	23.33	12.60	18.67	11.67	14.00	16.33	13.75	23.33	23.33
Low	10.50	8.40	5.40	9.33	9.00	8.40	7.47	5.40	11.67	7.00	8.50	7.47	5.40	5.40
Number of employees	27	13	77	10	2	18	60	47	1	18	21	20	67	127
Cash wage without maintenance:														
Average														
High														
Low														
Number of employees														
Spread of hours in schedule:														
Average	10.13	9.62	11.36	11.32	12.50	11.00	11.34	10.50	12.12	11.28	10.74	10.21	11.10	10.96
High	12.00	13.00	13.00	13.50	13.00	13.00	13.00	13.50	13.50	13.00	13.00	12.50	13.00	13.50
Low	8.00	9.00	8.00	9.00	12.00	8.50	8.00	8.00	8.50	10.00	8.00	8.00	9.00	8.00
Hours worked per day:														
Average	8.26	8.27	9.07	8.60	9.75	8.25	8.81	8.78	8.31	8.79	8.73	7.56	9.17	8.73
High	9.00	9.00	11.00	10.00	10.50	10.00	11.00	11.00	9.50	10.00	10.50	9.50	11.00	11.00
Low	6.00	8.00	6.00	8.00	9.00	6.00	6.00	7.50	8.00	8.00	7.50	6.00	8.00	6.00
Hours worked per week:														
Average	48.24	51.08	59.01	52.72	64.75	50.25	56.72	54.03	51.94	53.94	53.86	47.88	58.36	54.72
High	54.00	56.00	73.50	63.00	73.50	63.00	73.50	73.50	60.50	63.00	73.50	60.00	72.00	73.50
Low	30.00	46.00	42.00	48.00	56.00	30.00	42.00	40.00	48.00	46.00	43.00	30.00	48.00	30.00
Time off (most frequent):														
1 Day each week	29	4	2	19		12	9	33	1	17	23	6	7	54
½ Day each week		1	12	8		4	4	13		5	2	4	10	21
½ Day each week plus ½ day alternate weeks			6	9	1	6	3	5	7		8			15
¾ Day each week			11				11			1			10	11

Kitchen Porter, Cleaner

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0–99	100–199	200–299	300–399	400–	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	6	3	21	12		4	20	18		15	4	7	16	42
Average cash wage per week	19.31	13.39	9.19	13.90		10.77	9.87	15.30		14.70	11.10	9.68	11.44	12.28
Cash wage in addition to full maintenance:														
Average				9.33		9.33				9.33				9.33
High				9.33		9.33				9.33				9.33
Low				9.33		9.33				9.33				9.33
Number of employees				3		3				3				3
Cash wage in addition to meals only:														
Average	18.47	13.39	9.19	15.94		15.00	9.87	14.81		15.05	11.06	9.68	11.44	12.07
High	20.60	17.50	10.50	20.00		15.00	15.17	20.60		20.60	12.50	10.50	20.00	20.60
Low	15.17	11.00	5.40	12.50		15.00	8.00	5.40		8.00	9.00	8.25	5.40	5.40
Number of employees	4	3	21	8		1	20	15		10	3	7	16	36
Cash wage without maintenance:														
Average	21.00			11.25				17.75		21.00	11.25			17.75
High	21.00			11.25				21.00		21.00	11.25			21.00
Low	21.00			11.25				11.25		21.00	11.25			11.25
Number of employees	2			1				3		2	1			3
Spread of hours in schedule.														
Average	10.92	11.33	10.53	11.04		12.25	11.25	10.50		11.33	11.19	10.86	10.80	11.05
High	16.00	13.75	12.00	13.00		13.00	16.00	13.75		13.00	13.75	12.00	16.00	16.00
Low	8.00	10.00	8.50	9.00		10.00	8.50	8.00		8.00	9.50	8.50	9.00	8.00
Hours worked per day:														
Average	7.92	9.58	8.90	8.92		9.75	8.85	8.57		8.90	9.44	8.21	8.84	8.82
High	8.00	10.75	11.00	10.00		10.00	10.50	11.00		10.00	10.75	9.00	11.00	11.00
Low	7.50	9.00	7.50	8.00		9.00	7.50	7.50		7.50	9.00	7.50	8.00	7.50
Hours worked per week:														
Average	48.67	60.42	57.21	56.95		62.25	55.88	54.86		55.03	65.62	51.86	57.78	56.11
High	55.00	75.25	72.00	63.00		63.00	68.00	75.25		63.00	75.25	54.00	72.00	75.25
Low	48.00	52.00	45.00	48.00		60.00	45.00	45.00		45.00	56.00	45.00	48.00	45.00
Time off (most frequent):														
½ Day each week			4	7		4	3	4		5		3	3	11
1 Day each week	5		2	3			3	7		7		1	2	10
2 Half days each week		1	3	2			3	3			3	2	1	6

Waiter, Waitress

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0-99	100-199	200-299	300-399	400-	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees		6	34	17	2	26	23	6	1	16	12	28		57
Average cash wage per week		8.00	6.88	8.88	10.26	7.95	6.85	8.00	11.20	7.07	7.53	7.80		7.60
Cash wage in addition to full maintenance:														
Average			6.71	8.88	9.33	8.40				6.71	7.41	12.13		8.45
High			7.00	12.83	9.33	12.83				7.00	10.00	12.83		12.83
Low			5.83	7.00	9.33	5.83				5.83	7.00	9.33		5.83
Number of employees			4	16	1	19				4	11	5		20
Cash wage in addition to meals only:														
Average		8.00	6.90	8.87	11.20	6.73	6.85	8.00	11.20	7.19	8.87	6.85		7.13
High		8.00	11.20	8.87	11.20	8.87	7.00	8.00	11.20	8.00	8.87	7.00		11.20
Low		8.00	5.83	8.87	11.20	5.83	6.72	8.00	11.20	5.83	8.87	6.72		5.83
Number of employees		6	30	1	1	7	23	6	1	12	1	23		37
Cash wage without maintenance:														
Average														
High														
Low														
Number of employees														
Spread of hours in schedule:														
Average			9.28	11.53	12.75	11.62	8.00		12.50	11.90	10.92	8.89		9.39
High			12.50	13.00	13.00	13.00	8.00		12.50	12.00	12.00	13.00		13.00
Low			8.00	10.00	12.50	8.00	8.00		12.50	11.00	10.00	8.00		8.00
Hours worked per day:														
Average			7.10	7.88	8.25	7.62	7.00		8.50	6.00	7.83	7.18		7.01
High			9.00	9.00	8.50	9.00	7.00		8.50	9.00	9.00	8.00		9.00
Low			7.00	7.00	8.00	7.00	7.00		8.50	4.00	7.00	7.00		7.00
Hours worked per week:														
Average		46.00	47.59	49.37	54.00	47.89	48.00	46.00	56.00	45.88	48.27	48.71		47.95
High		46.00	56.00	54.00	56.00	54.00	48.00	46.00	56.00	53.00	54.00	54.00		56.00
Low		46.00	45.00	43.75	52.00	43.75	48.00	46.00	56.00	45.00	43.75	43.75		43.75
Time off (most frequent):														
No time off		6	23				23	6		6		23		29
1 Day alternate weeks			9	5	1	13				9		5		14
½ Day each week plus ½ day alternate weeks				7		7					7			7
1 Day each week				5		5					5			5

General Dining Room Worker

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0–99	100–199	200–299	300–399	400–	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	3	11	55	18	5	64	15	3	2	33	5	12	35	87
Average cash wage per week	12.83	10.49	6.35	14.59	9.00	8.46	10.15	9.08	10.00	5.41	10.13	8.45	11.86	8.80
Cash wage in addition to full maintenance:														
Average	12.83	9.92	4.94	10.00		5.33	12.83		10.00	4.93		7.10		5.52
High	12.83	9.92	6.53	10.00		10.00	12.83		10.00	12.83		9.92		12.83
Low	12.83	9.92	4.67	10.00		4.67	12.83		10.00	4.67		6.53		4.67
Number of employees	1	1	35	2		38	1		2	31		6		39
Cash wage in addition to meals only:														
Average	12.83	10.54	9.04	15.16	9.00	13.02	10.37	9.08		12.83	10.13	10.83	11.86	11.61
High	12.83	14.00	11.50	15.40	9.00	15.40	14.00	12.87		12.83	11.67	11.50	15.40	15.40
Low	12.83	9.00	5.40	13.50	9.00	5.40	8.17	5.40		12.83	9.00	8.17	5.40	5.40
Number of employees	2	10	19	16	5	26	13	3		2	5	5	35	47
Cash wage without maintenance:														
Average			4.67				4.67					4.67		4.67
High			4.67				4.67					4.67		4.67
Low			4.67				4.67					4.67		4.67
Number of employees			1				1					1		1
Spread of hours in schedule:														
Average	12.50	10.35	10.80	9.50	10.80	10.19	11.63	11.08	13.50	10.16	12.00	12.17	9.88	10.51
High	14.00	12.75	13.00	13.50	12.00	13.50	14.00	11.25	13.50	14.00	12.75	13.00	12.00	14.00
Low	11.00	8.00	8.00	9.00	10.00	8.00	10.00	11.00	13.50	10.00	10.50	8.00	8.00	8.00
Hours worked per day:														
Average	8.67	8.64	8.49	8.22	9.00	8.45	8.13	9.33	10.00	8.52	8.47	7.92	8.50	8.46
High	9.00	9.00	12.00	10.50	9.00	12.00	9.00	11.00	10.50	9.00	9.00	8.25	12.00	12.00
Low	8.00	8.00	6.00	8.00	9.00	7.50	6.00	8.00	9.50	8.00	8.00	6.00	7.50	6.00
Hours worked per week:														
Average	52.00	51.82	52.13	55.61	53.60	52.41	54.27	52.67	60.50	50.18	53.60	51.50	55.17	52.80
High	54.00	53.00	80.00	67.50	56.00	80.00	58.00	72.00	67.50	54.00	56.00	58.00	80.00	80.00
Low	48.00	48.00	32.00	48.00	52.00	45.00	42.00	32.00	53.50	48.00	50.00	42.00	32.00	32.00
Time off (most frequent):														
½ Day each week		3	34	14		49	1	1		30	2	2	17	51
½ Day alternate weeks		7	4		3	2	6					4	7	11
1 Day each week	3	1	2	2		6	1	1		3	1		4	8
2 Half days each week			7		2	5					2	5		7

Other Food Department Employees

	RELIEF COOK	BUTCHER	NIGHT COOK	HEAD BAKER, PASTRY COOK	ASSISTANT BAKER	DIET KITCHEN MAID	HEAD STORE CLERK	ASSISTANT STORE CLERK	HEAD WAITER, WAITRESS	BUS BOY, TRAY MAID	CHECKER	CASHIER
Total number of employees	24	13	8	57	38	1	20	11	35	19	4	3
Average cash wage per week	13.55	20.32	10.62	21.02	13.70	11.00	18.16	8.53	11.51	6.70	10.00	13.16
Cash wage in addition to full maintenance:												
Average	12.54	29.17	10.62	23.01	14.61		15.34		10.58	6.68	10.00	
High	14.00	29.17	15.00	40.83	21.00		18.67		17.50	15.17	10.00	
Low	9.33	29.17	10.00	9.33	10.00		10.50		8.50	5.83	10.00	
Number of employees	4	1	8	18	9		6		27	11	4	
Cash wage in addition to meals only:												
Average	13.75	19.68		20.10	13.64	11.00	18.16	11.23	14.61	7.61		13.48
High	31.50	33.83		54.33	27.07	11.00	32.14	14.00	25.00	9.50		14.00
Low	4.67	9.50		8.00	7.47	11.00	11.67	8.15	10.27	5.79		12.97
Number of employees	20	11		39	27	1	20	5	8	8		2
Cash wage without maintenance:												
Average		18.42			6.00			5.15				12.50
High		18.42			6.00			6.24				12.50
Low		18.42			6.00			4.79				12.50
Number of employees		1			1			4				1
Spread of hours in schedule:												
Average	10.56	10.60	12.97	10.82	10.43	8.00	10.94	9.31	12.14	10.32		8.33
High	14.00	13.00	13.00	15.00	15.00	8.00	13.00	10.00	16.00	14.00		10.00
Low	7.00	9.00	12.75	7.00	7.00	8.00	8.50	9.00	6.00	8.00		7.00
Hours of work per day:												
Average	8.18	8.58	8.81	8.49	8.27	7.25	8.58	7.73	8.29	8.34		7.50
High	10.50	10.50	9.00	11.00	11.00	7.25	10.50	9.00	9.00	9.50		8.00
Low	5.00	8.00	7.50	6.50	4.00	7.25	7.50	7.00	5.50	7.00		7.00
Hours worked per week:												
Average	49.84	54.27	55.69	52.37	53.65	45.00	53.45	61.60	51.81	50.89	40.00	48.00
High	73.50	73.50	57.00	73.50	73.00	45.00	66.00	56.00	57.00	57.00	40.00	48.00
Low	30.50	48.00	46.50	37.50	24.00	45.00	43.00	48.00	38.50	48.00	40.00	48.00
Time off (most frequent):												
1 Day each week	14	5		21	8	1	7	2	4			1
½ Day each week plus ½ day alternate weeks	1	1	8	6	3		1		20			
½ Day each week	2	3		7	7		2		2	10		
No time off				3	5			7	4	4	4	1
2 Half days each week	1			7	1		3		4			

Chamber, House Maid

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0-99	100-199	200-299	300-399	400-	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	66	20	48	72	13	193			64	91	51			206
Average cash wage per week	12.70	10.16	6.46	12.26	8.38	11.01			13.06	10.59	8.54			10.85
Cash wage in addition to full maintenance:														
Average	9.67	7.23	5.87	9.72	11.09	8.33			9.92	8.06	8.73			8.37
High	11.67	8.17	7.70	11.09	11.09	11.67			10.50	11.67	11.09			11.67
Low	7.00	5.83	4.67	9.00	11.09	4.67			9.33	4.67	5.83			4.67
Number of employees	14	5	19	26	1	63			4	41	19			64
Cash wage in addition to meals only:														
Average	13.16	11.14	6.47	12.83	8.40	11.54			13.44	11.86	8.10			11.33
High	15.17	14.00	9.45	16.33	9.45	16.33			16.33	12.85	14.00			16.33
Low	11.67	8.17	3.50	9.33	5.83	3.50			5.83	5.83	3.50			3.50
Number of employees	47	15	23	19	7	97			39	34	31			104
Cash wage without maintenance:														
Average	16.80		8.26	14.32	7.81	14.58			12.95	14.36	18.67			13.69
High	18.67		10.50	15.00	7.90	18.67			15.00	16.33	18.67			18.67
Low	16.33		7.47	11.40	7.47	10.50			7.47	10.50	18.67			7.47
Number of employees	5		6	27	5	33			21	16	1			38
Spread of hours in schedule:														
Average	8.54	8.47	8.95	8.91	10.27	8.64			8.32	9.06	8.72			8.76
High	9.00	12.00	12.00	12.00	12.00	12.00			12.00	12.00	12.00			12.00
Low	8.00	6.50	5.00	6.00	5.00	6.00			5.00	7.00	6.00			5.00
Hours worked per day:														
Average	7.84	7.56	8.23	7.50	8.77	7.72			7.78	8.03	7.36			7.79
High	8.00	9.00	11.00	10.50	11.00	10.50			11.00	9.00	9.00			11.00
Low	7.00	6.00	4.50	5.50	4.50	5.50			4.50	7.00	6.00			4.50
Hours worked per week:														
Average	46.77	46.06	53.95	46.64	57.62	47.70			48.08	49.90	45.83			48.33
High	50.00	56.00	72.00	63.00	72.00	63.00			72.00	63.00	54.00			72.00
Low	42.00	36.00	31.50	33.00	31.50	33.00			31.50	42.00	36.00			31.50
Time off (most frequent):														
1 Day each week	40	9	6	46		101			25	56	20			101
2 Half days each week	22		12		4	30			21	6	7			34
½ Day each week		3	16	11	2	28			11	16	3			30
No time off		3	10	4	2	15			6	3	8			17
1 Day alternate weeks				8	1	7					8			8

House Man, Janitor, Porter

	WEST	CENT.	SOUTH	EAST	WOMEN		MEN		0–99	100–199	200–299	300–399	400–	ENTIRE GROUP
					Negro	White	Negro	White						
Total number of employees	19	2	16	65		2	10	90	49	22	31			102
Average cash wage per week	17.09	14.88	12.14	23.87		14.00	12.27	21.66	23.97	21.13	14.88			20.59
Cash wage in addition to full maintenance:														
Average	18.67		9.33	17.95			14.58	17.88	20.42		16.90			17.57
High	18.67		9.33	26.83			15.17	26.83	26.83		24.50			26.83
Low	18.67		9.33	14.00			14.00	9.33	14.00		9.33			9.33
Number of employees	1		1	19			2	19	4		17			21
Cash wage in addition to meals only:														
Average	15.12	8.75	12.23	21.42		14.00	11.69	15.01	16.18	14.60	11.53			13.91
High	19.32	8.75	19.83	30.00		14.00	12.83	30.00	30.00	19.83	14.00			30.00
Low	11.67	8.75	4.00	12.83		14.00	10.00	4.00	11.67	8.75	4.00			4.00
Number of employees	10	1	13	2		2	8	16	10	5	11			26
Cash wage without maintenance:														
Average	19.36	21.00	13.00	26.54				24.90	26.60	23.05	15.67			24.90
High	23.33	21.00	17.00	35.00				35.00	26.83	35.00	21.00			35.00
Low	15.17	21.00	9.00	18.67				9.00	18.67	15.17	9.00			9.00
Number of employees	8	1	2	44				55	35	17	3			55
Spread of hours in schedule:														
Average	8.50	9.00	9.84	9.18		8.00	10.29	9.06	8.98	8.74	9.86			9.12
High	10.00	9.00	11.00	13.00		8.00	12.00	13.00	13.00	11.00	12.00			13.00
Low	7.00	9.00	6.00	8.00		8.00	9.75	6.00	8.00	7.00	6.00			6.00
Hours worked per day:														
Average	7.86	8.50	8.89	7.90		7.50	8.08	8.02	7.92	7.92	8.28			8.02
High	9.00	9.00	10.00	9.50		7.50	9.00	10.00	8.00	10.00	9.50			10.00
Low	6.00	8.00	6.00	5.00		7.50	7.00	5.00	7.50	6.00	5.00			5.00
Hours worked per week:														
Average	46.53	53.00	57.12	47.66		43.00	51.80	48.87	47.49	48.95	51.55			49.04
High	54.00	56.00	63.00	61.00		43.00	60.00	63.00	60.00	63.00	61.00			63.00
Low	36.00	50.00	42.00	30.00		43.00	40.00	30.00	43.00	36.00	30.00			30.00
Time off (most frequent):														
1 Day each week	15	1	1	21			1	37	9	16	13			38
1 Day each week except 1 to 2 hours in a.m.		1		36				37	36	1				37
2 Half days each week			2	3			1	4		1	4			5
½ Day each week	2		1	2		2	1	2	3	1	1			5

Other House Department Employees

	HOUSEKEEPER, MATRON	PARLOR, BELL MAID	CHAMBER MAID AND WAITRESS	FLOOR MAID	LINEN MAID	SEAMSTRESS	CLEANER	ELEVATOR OPERATOR	REPAIR MAN	NIGHT WATCHMAN, NIGHT MATRON	HEAD OF LAUNDRY	LAUNDRY WORKER	ENGINEER	FIREMAN	STENOGRAPHER	BOOKKEEPER	GENERAL CLERK	TELEPHONE OPERATOR
Total number of employees	59	25	65	7	5	4	11	2	11	23	10	32	11	14	26	9	19	20
Average cash wage per week	16.86	11.61	10.01	8.62	10.60	14.38	9.32	5.83	23.67	20.10	15.68	11.74	30.70	21.17	21.84	19.93	17.08	14.29
Cash wage in addition to full maintenance:																		
Average	16.96	9.37	9.58	9.33	8.16			5.83		11.08	10.00	7.00	32.77		17.50	16.81	12.00	11.67
High	44.45	16.00	11.09	9.33	9.33			5.83		12.83	10.00	7.00	46.67		17.50	30.33	17.50	14.00
Low	5.83	7.00	7.00	9.33	7.00			5.83		8.17	10.00	7.00	22.17		17.50	7.59	8.17	7.00
Number of employees	39	8	20	1	2			2		4	3	2	5		1	3	7	4
Cash wage in addition to meals only:																		
Average	12.19	11.94	10.20	8.50	12.23	13.17	8.82		23.62	18.97	14.46	8.61	28.66	20.21	26.41	19.54	11.08	14.50
High	17.50	14.10	13.50	11.00	14.69	13.50	14.00		24.50	25.00	31.27	35.00	37.33	28.00	35.00	21.57	11.67	20.00
Low	7.47	5.83	4.67	6.00	10.00	12.50	6.00		23.33	8.75	9.00	6.50	20.00	7.00	19.37	17.50	10.50	6.00
Number of employees	12	13	45	6	3	3	10		4	7	6	16	2	4	5	2	2	14
Cash wage without maintenance:																		
Average	23.33	15.00				18.00	14.40		23.69	23.77	40.00	15.92	29.14	21.55	20.92	22.47	21.84	18.08
High	23.33	15.00				18.00	14.40		29.17	29.17	40.00	23.75	35.54	29.17	28.00	27.71	23.33	21.00
Low	23.33	15.00				18.00	14.40		15.00	15.00	40.00	10.50	14.00	17.00	15.52	15.52	8.40	15.17
Number of employees	8	4				1	1		7	12	1	14	4	10	20	4	10	2
Spread of hours in schedule:																		
Average	10.18	9.09	11.08	9.60	10.20	9.25	8.91	7.88	9.00	10.08	9.08	9.07	10.75	9.50	8.26	10.61	9.97	8.68
High	18.00	12.00	12.00	10.00	13.00	9.50	12.00	8.00	10.00	12.00	10.00	10.00	15.00	11.00	9.00	13.00	15.50	15.50
Low	6.00	4.50	10.00	9.50	8.00	9.00	8.00	7.75	8.00	7.00	8.00	8.00	8.00	8.00	7.00	8.00	6.00	6.00
Hours of work per day:																		
Average	8.69	8.04	7.70	7.43	8.47	8.38	8.27	7.12	8.05	8.76	8.50	8.63	9.09	8.54	7.38	7.50	7.47	7.48
High	17.00	10.00	9.00	9.00	10.50	9.00	9.00	7.25	9.00	12.00	9.00	9.00	12.00	11.00	8.00	8.00	9.50	9.50
Low	4.00	4.50	5.50	4.00	7.50	8.00	7.50	7.00	7.00	6.00	8.00	8.00	7.00	8.00	7.00	7.00	5.00	5.50
Hours worked per week:																		
Average	53.42	48.08	48.26	54.57	53.70	50.25	54.36	49.75	47.73	55.37	44.45	46.19	55.32	54.33	41.62	43.50	42.92	30.75
High	100.00	55.00	56.00	66.50	73.50	66.50	66.50	49.75	54.00	84.00	54.00	54.00	72.00	77.00	50.00	52.00	50.00	49.50
Low	24.00	27.00	37.00	32.00	45.00	44.00	43.00	49.75	42.00	28.00	40.00	32.00	42.00	48.00	38.00	39.00	30.00	38.00
Time off (most frequent):																		
1 Day each week	30	12	27		1	2	6		9	12	5	19	3	3	5	3	9	11
1½ Day each week		1				1	4		1		2	4	2	3	14	5	10	2
½ Day each week	17	1	16				1						2		7	2		
1 Day alternate weeks			18	5	1	1				1			2	2				2

tions providing lockers, 1 to 2 in 13 per cent, 1 to 3 in 10 per cent, 1 to 5 in 5 per cent, while the remaining 18 per cent failed to indicate the number.

Employees work overtime in 65 per cent of these institutions, due in many instances to special occasions which occur infrequently. Only a few have definite limits which are stated as the maximum amount of overtime allowed per day, per week, or as the total number of hours of work permitted per day, per week. These limitations vary from 2 to 5 hours overtime per day, 3 to 6 per week or a total of 16 hours of work per day and 65 per week. Payment among the 64 per cent of the institutions offering some recompense for overtime shows a wide variation both in amounts and methods. Over one-third of these units pay the regular rate while others pay a flat rate of 25¢ to 50¢ per hour or 1½ the regular rate, or give additional time off duty. Occasionally the form and amount of payment varies with the work. These policies do not correspond to Harper's report (7): "With regard to the compensation for such overtime, it has now been long established by organized labor that time and a half is adequate return for overtime and double pay for Sunday and holiday work".

Twenty-one institutions give bonuses or gifts to the employees. In the main, these are presented at Christmas time. The highest amount specified is one week's pay at Christmas and the lowest 50¢; others listed are 1 day's pay, and 10 to 25 per cent of a week's wage. When bonuses or gifts are given to the hospital employees, they come from the institution. In this report the colleges and universities may give them or the amounts may come from a student fund or student contributions to be divided among the workers. Such a division insures a gift to those behind the scenes as well as to those who come in direct contact with the students.

Scheduled wage increases are few. Advancement is based primarily on the performance of the individual. Quality of service is the governing factor in the majority of cases though in some the length of service is also a related factor. One of the policies which serves to develop loyalty and acts as an incentive is that of promotion within the ranks. This is in practice in approximately two-thirds of the institutions. Other incentives listed are: extra time off at holidays, summer work for the best employees, extra remuneration, and tickets to intercollegiate activities.

Approximately 75 per cent of all the colleges cooperating in this study give holidays to the employees. If the full days are not given to all, those in the house department usually receive them since in many colleges their work, other than the students' rooms, can be held over for a day and the students may be asked to keep their own rooms in order for the holiday. Or occasionally a minimum force will be on duty to cover the necessary daily work and these employees will be given their extra day before or after the holiday. When meal service is continued, the prevailing practices are to give half of the food department employees one holiday and the other half the extra time another day or the following holiday, or to cut the holiday to a half day for those enployees whose services are required. Three to 6 full days are most frequently

given and these are generally given with pay.

In the guide sheet of the questionnaire, holidays are defined as referring to single days given in addition to regular time off duty per week. Where more than one day is given for Thanksgiving, Christmas or during the spring holiday, the time is considered as a vacation. Only 51 colleges replied to the inquiry regarding vacations, but of this number all but 4 give the employees some vacation with pay and some additional vacation without pay. Two weeks are allowed with pay in more than half of these institutions and in the others the amount ranges from 6 days to 1 month. The allowance is alike for all employees in most of these reports, though a few specify individual employees or groups of employees who may be included or excluded.

Vacation without pay is from 1 to 2 months in 19 colleges and from 2½ to 3½ months in 15 more. These conditions exist primarily in colleges which are closed for the summer months or which are not operating residence and dining halls to full capacity during summer sessions. If the employees are self-supporting and there is no opportunity for other employment during the summer months, this long vacation without pay necessitates the wage for 11 to 8½ months, depending on the length of vacation, being sufficient to cover expenses for the entire 12 months. This is one of the employment difficulties which the hospital dietitian does not have to consider. In order to maintain a like standard of living for the college employee only receiving a 9 months' wage, the average amount per week must be sufficiently higher to cover the unproductive period.

The two factors listed first by Tead (8) for good morale among employees are good physical and good mental health. Two-thirds of the colleges require a medical examination of these employees. This is a decided improvement over the 1935 findings (2) when examination was required in 40 per cent of the small food units (0–99 size) increasing to 75 per cent of the largest units (400+) and 24 per cent of the house units. This decrease of requirement in the small units is not in evidence in the present study. Mel (9) discusses the several constructive steps taken by the New York City Department of Health in promoting the personal hygiene of food handlers and states that "the new regulations prohibit persons affected with a communicable disease from working in food handling establishments and prohibit food dealers from employing any such persons". Individual colleges require the examination before applicants apply for work, during the first week of employment, and the first of January irrespective of the date of employment; 6 require it before employing; 16 when employed and the remainder at the beginning of the fall semester. Thirty-five colleges reexamine annually and 11 semi-annually; others do so only when necessary. Because of the possible developments within a relatively short period of time, the semi-annual check is recommended. A fee is charged for these examinations in 11 colleges; 1 is located in the West, 3 in the East and 7 in the South. The usual charge is $1.00 with the highest fee reported as $3.00. A number of units

permit each employee to make his own arrangements.

Approximately half of the colleges give medical care with two of these charging a fee for the service. In some units this care is limited to accidents, first aid and the free advice and service of a nurse. A yearly charge of $5.00 in one unit and $2.50 in another provides for medical care while a number of others have this included in the group insurance policy.

Thirteen colleges provide hospitalization, 7 of which charge a fee for this service. In the East, the hospital group insurance or the 3¢ a day plan is operating for these workers in 3 colleges. In the South two plans are reported, one at a cost of $2.50 a year and the other at a registration fee of $1.00 and a monthly charge of 55¢. A yearly fee of $1.75 provides 14 hospital days in one unit of the central division. Other regulations show a variation according to the length of time and the treatment required or provide either infirmary care, free care for accidents on the campus, 5 free hospital days per year, or free care with full pay for 1 week.

Half of the colleges give the employees some sick leave with pay. The length varies from one-half day to an unstated amount. One week to 10 days is the most frequent allowance throughout all geographical divisions. The southern and central districts report a maximum of 4 weeks. A state law requirement of 15 days is complied with in one eastern institution. Thirteen colleges permit sick leave but do not pay the employee during the period of illness. This allowance is unlimited except for 1 unit with a two weeks' allowance and 2 others where the allowance is decided according to the individual case. In 8 colleges the stipulated allowance is effective for all alike. In the others a wide variation of governing factors regulates the allowance. In most of these the decision is made according to the individual case though the length of service and the necessity for hiring a substitute are two other important criteria.

A common type of insurance carried by large school cafeterias is workmen's compensation. But in this college study, only 53 institutions report carrying this form of protection. The wide variation in the laws in the different states no doubt accounts for this figure. According to a recent compilation (10), 2 states do not have a workmen's compensation law and it affects only hazardous employment in 9 states and extra hazardous in 6. Domestic service is excluded in 6 states and there are further possibilities which permit the employer to operate without carrying this form of insurance. It covers full-time regular employees in all cases when carried and in addition the coverage includes part-time workers in 41 colleges, student employees in 35, National Youth Administration workers in 16, and Works Progress Administration workers in 3.

Fifteen colleges carry group insurance but it is not taken by all employees though available to regular full-time workers. The replies indicate that inasmuch as the benefits stop on the termination of employment, the employees are not always interested. The types specified are life and dismemberment, and accident.

Pensions, retirement funds and protection against financial loss through accident, sickness and death are credited

as means of creating a sense of security and contributing to the welfare of employees (6). The desirability and need for establishing pensions is evidenced more in the East. Five of the 8 colleges operating such plans are in this division. The employees in a few of the colleges are provided for by state pensions and in 4 others by insurance corresponding to the social security plan. If the institutions not included in the social security plan are to continue to attract capable and efficient employees they will be required to provide some old age security which will be equally effective. An awareness of this need is apparent by the number of additional replies which indicate that the formation or consideration of such a plan is under way.

Employees in 4 colleges are on the civil service list. The replies state that these employees are on by virtue of the colleges being state supported.

The workers in one college have organized an employees' organization. Representatives from this group deal with the management on wages and policies. Employees belong to outside unions in 2 colleges.

This material is compiled to show what labor policies and practices are in vogue throughout the country. The several groupings will enable the manager to rate her own institution with a like group or the total. As is evident to all, these figures are far from the optimal goal in many of the situations. The inclusion of these conditions in the study is not to approve them but to bring about an awareness of the need for improvement. College residence halls and dining halls are setting standards of living and developing proper food habits for the students. To foster the social and educational possibilities it is essential that the personnel of the department be established along reasonable and efficient lines. The educational attitude of the manager does not rest in her responsibility to the students alone, but to her employees as well. This involves due consideration of the individual worker, promoting his personal effectiveness, establishing good labor policies and deserving a reputation for fair dealing and cooperation.

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RECIPE WRITING AND ARITHMETIC

MARY I. BARBER AND KATHERINE H. GORDON

Home Economics Department, Kellogg Company, Battle Creek, Michigan

EVERYONE who uses recipes from different sources knows the lack of uniformity in the way they are written. It is amusing today to read the conversational recipes which were in vogue fifty or even twenty-five years ago. From our grandmothers' files we learn that Aunt Rosie beat together three eggs and one cup of sugar for twenty minutes, using her hand as a beater, and then added a tea-cup of flour and about one-fourth cup of water, lemon to taste, and baked the cake until done. It is a dark secret as to the size of pan, the temperature of the oven, and approximate time of baking.

Modern recipes are not amusing and all too often neither are they specific. A study of both small and large quantity formulas discloses variations in the size of cards on which they are printed, in the way ingredients are listed, and in the manner in which directions for combining ingredients are given (or not given). Frequently such information as size of pan, number of servings and approximate time of cooking is omitted. Cards carrying large quantity recipes are found in sizes 3″ x 5″, 4″ x 6″, 5″ x 7″, 5½″ x 8½″, and 6″ x 9″. However, the 4″ x 6″ cards seem to be a more or less standard size for filing. Booklets are in sizes 6″ x 8″, 3¾″ x 9″, 6″ x 7¼″, 6″ x 9″, 8½″ x 11″ and 9″ x 12″. There is a noticeable trend toward the listing of ingredients in the order of use, but the choice of terms and manner of giving directions for combining ingredients lack uniformity. The step form for the method of mixing is endorsed by many because of its conciseness and clarity.

Dietitians, food editors and home economics representatives of food manufacturers can cooperate to advantage in an attempt to standardize recipe writing so that inexperienced people will be given complete directions. The following rules cover the points essential to a clear recipe. Even if a general form is followed by recipe writers, individuals can show originality in recipe writing through size and style of type, color and weight of stock, and art work.

Here are two examples of quantity recipes. In one, there are columns for listing costs. In the other, there is space for entering the amounts of ingredients needed for the number of servings commonly used in the individual institution. In both, definite rules have been followed as to wording, directions for mixing and information about size of muffins or cookies, number, oven temperature—in fact an effort has been made to tell the baker everything he may need to know about the recipe.

File—BREADS—Quick Breads
KELLOGG'S
Menus and Recipes *H. E. Seal*

ALL-BRAN MUFFINS

One Muffin: 2½ inches in diameter: use 2 ounces mix or No. 16 scoop

Ingredients	2 dozen (3 pounds mix)	Cost	8 dozen (12½ pounds mix)	Cost
Shortening	½ cup (4 oz.)	.....	1 pound	.....
Sugar	¾ cup (6 oz.)	.....	1 lb. 8 oz.	.....
Eggs	3 (5¼ oz.)	.....	12 (1 lb. 5 oz.)	.....
Kellogg's All-Bran	3 cups (6 oz.)	.....	1 lb. 8 oz.	.....
*Milk	1 pint	.....	2 quarts	.....
Flour	3 cups (12 oz.)	.....	3 pounds	.....
Baking Powder	8 teaspoons (1 oz.)	.....	4 ounces	.....
Salt	1½ teaspoons	.....	¾ ounce	.....
	Total Cost	.....		.....

1. Blend shortening and sugar thoroughly; beat in eggs, All-Bran and milk. Let soak until most of moisture is absorbed.
2. Sift dry ingredients and add to first mixture, stirring only until flour disappears.
3. Fill greased muffin pans two-thirds full. Bake in moderately hot oven (400°F.) about 30 minutes.

* If sour milk or buttermilk is used in place of sweet milk, add one teaspoon soda for each pint of milk used and decrease baking powder by one-half.

File—DESSERTS—Cakes, Cookies
KELLOGG'S
Menus and Recipes *H. E. Seal*

ALL-BRAN BUTTERSCOTCH REFRIGERATOR COOKIES

One Cookie: 2 inches in diameter

Ingredients	7½ dozen (2 lb. 4 oz. mix)	30 dozen (9 pounds mix)	
Butter	1 cup (8 oz.)	2 pounds	.....
Brown Sugar	2 cups (11 oz.)	2 lb. 12 oz.	.....
Eggs	1 (1¾ oz.)	4 (7 oz.)	.....
Kellogg's All-Bran	1 cup (2 oz.)	8 ounces	.....
Flour	3 cups (12 oz.)	3 pounds	.....
Baking Powder	2 teaspoons (¼ oz.)	1 ounce	.....

1. Beat butter until creamy; add sugar and eggs and beat thoroughly.
2. Stir in All-Bran and sifted dry ingredients; mix well.
3. Shape into cylindrical rolls about one and one-half inches in diameter and about sixteen inches long; wrap in waxed paper and store in refrigerator until firm.
4. Cut into one-fourth inch slices and bake on ungreased baking sheet in moderately hot oven (425°F.) about 10 minutes.

GENERAL FORM AND RULES FOR WRITING LARGE QUANTITY RECIPES

(*Refer to All-Bran Butterscotch Refrigerator Cookie Recipe*)

I. General Form
- File Indication:
  - In upper right or left corner.
  - Indicate main classification and sub-classification.
    - *Example:* File — BREAD — Quick Breads
- Date and key number on card desirable.
- Company or institution name or insignia on every recipe.
- Title centered; use upper case letters.
- Description of Serving:
  - *Example:*
    - One Muffin: 2½ inches in diameter; use 2 ounces mix or No. 16 scoop
    - One Serving: 3 x 3 inches
    - One Serving: 4 ounces
    - One Serving: ¾ cup
- Listing of Ingredients:
  - Use upper and lower case letters for ingredients, and lower case only for measurements.
  - Line up words and right margin of figures.
  - Arrange in order of use.
  - Avoid the use of parentheses and commas whenever possible.
  - Write out all words; abbreviate only when necessary to save space.
  - Use descriptive word or phrase when necessary for clarity.
- Units:
  - Avoid unusual measurements or weights.
  - Quantities to serve up to 25 persons—Use common measures with weights in parentheses.
    - *Example:*
      - ½ cup (4 oz.)
  - Quantities to serve over 25 persons—Use weights and institution measures
    - *Example:*
      - 1 pound
      - 1 gallon
  - Leave blank space for calculations of cost or listing of amounts to suit individual needs.
- Yield:
  - Give total quantity of mix; use weight for baked products and measure for liquids.
- Method of Mixing:
  - Number each step
  - Use concise phrases; avoid repetition of descriptive terms used in listed ingredients.

II. Use of Terms
- In List of Ingredients:
  - Cream
    - Specify kind
      - Top Milk
      - Thin Cream (18%)
      - Whipping Cream (40%)
  - Dried Fruits
    - Use descriptive terms (do not repeat in method).
      - *Example:*
        - Seedless Raisins
        - Seeded Raisins
        - Chopped Figs
        - Pitted Chopped Dates
  - Eggs
    - Specify "Eggs" without description, if recipe calls for whole eggs.
    - Specify "Egg Yolks," if only yolks are used.
    - Specify "Egg Whites," if only whites are used.
    - Specify "Eggs, separated," if method requires it.
  - Extracts
    - Use "Extract" after kind specified.
      - *Example:* Vanilla Extract
  - Flour
    - Designate either of two types—"Flour" or "Cake Flour." (Pastry flour is not commonly used in all sections.)

Fruits and Vegetables
Specify most practical measure or weight for fresh products.
For canned products list size of can with measure of contents in parentheses.
Example: Pitted Sour Cherries:
1 No. 2½ can (3½ cups)
1 No. 10 can (13 cups)
Grated orange, lemon or grapefruit *rind*—not peel.
Honey
Specify this ingredient as "Honey" when liquid; otherwise "Comb Honey."
Leavenings, salt and spices
List soda, baking powder and salt (ingredients white in color) immediately following the flour.
List spices, cocoa, etc. after the white ingredients so that the color will not be carried on measuring spoons to the white powders in the cans.
Liquid
Specify temperature if necessary; cold, lukewarm, hot, etc.
Milk
For sweet milk use one word—"Milk."
When either sour milk or buttermilk may be used, indicate this (usually they are interchangeable).
Example: Sour Milk or Buttermilk
Molasses
Designate "dark" or "light," if necessary.
Nut Meats (two words)
If chopped: Chopped Nut Meats (do not repeat "chopped" in method).
Shortening, butter, fat and oil
"Shortening" or "Fat" when any type may be used (shortening preferred in batters and doughs).
"Butter" when only this type is desirable.
"Butter" or "Margarine" when either may be used.
"Oil" when this type is necessary.
"Melted Shortening" or "Melted Fat."
Sugar
When different types of sugars are used in same recipe, specify as "Granulated," "Brown" or "Confectioner's," etc.
When only granulated sugar is used, specify as "Sugar."
Always specify "Brown" sugar, and "Light" or "Dark," if necessary.
Specify "firmly packed" brown sugar.
Yeast
Specify type—compressed or dry.

In Method of Mixing:
Write out "two-thirds," "three-fourths," etc.
Use "flavoring" rather than mentioning specific kind. This will include all flavorings, if several are in list of ingredients.
"*Pans*"—not "tins."
Specify kind of cooking dish and whether it is to be covered.
Example: baking pan, covered casserole
Specify the beating of eggs as: slightly, well beaten, beat until light and fluffy, beat egg whites until stiff but not dry.
Give both temperature and cold water test for sirups.
Give both descriptive temperature and thermometer reading.
Example: Moderate oven (350°F.)
Give approximate cooking time.
Pare potatoes, apples, turnips.
Peel oranges, grapefruit, bananas, cooked potatoes.

Scrape carrots.

Oven Temperature Guide

slow	275–325°F.
moderate	350–375°F.
moderately hot	400–425°F.
hot	450–475°F.
very hot	500–550°F.

When writing a recipe, check it with these rules or by a set of rules drawn up especially for your own institution. It may seem complicated at first but you will soon find it automatic to express directions in a given way. You will become adept in analyzing new recipes and can foresee difficulties which members of your staff may have in understanding the wording of a recipe untried before in your kitchen.

FAMILY SIZE RECIPES

Small quantity recipes are used to some extent in nearly all hospitals. They are required for special diets, for class work and for intimate luncheons or dinners given by the executives. The form used for "family" recipes differs somewhat from that used for "institution" recipes. Here is an example:

Corn Flake Wafers

¼ cup butter
¼ cup brown sugar
½ cup granulated sugar
1 egg
¼ cup chopped nut meats
¼ cup shredded cocoanut
5 cups Kellogg's Corn Flakes

Blend butter and sugars thoroughly; add egg and beat well. Add nut meats, cocoanut and Corn Flakes; mix well. Shape cookies with rounded bowl of tablespoon and drop on lightly greased baking sheet. Bake in moderate oven (350°F.) about 10 minutes.

Yield: 2½ dozen cookies (2½ inches in diameter).

GENERAL FORM AND RULES FOR WRITING FAMILY RECIPES

(The use of terms and temperature guide is the same as for quantity recipes, so is not repeated)

I. General Form
- File Indication—desirable
- Title centered; use upper and lower case letters.
- Listing of Ingredients:
  - Use lower case letters for measurements and ingredients.
  - Line up words and right margin of figures.
  - Arrange in order of use.
  - Write out all words; abbreviate only when necessary to save space.
- Method of Mixing:
  - Form
    - If paragraphed, indent 5 spaces. Use only one paragraph unless more are required for clarity.
    - Use concise phrases; avoid repetition of descriptive terms used in listed ingredients.
    - Indent 5 spaces before "Yield."
    - When "Note" is given, double space between "Yield" and "Note" if possible.
- Yield:
  - Give size of pan, and number and size of servings when possible.
  - *Examples:*
    - 1 loaf (5 x 9 inch pan)
    - 1 cake (8 x 8 x 2 inch pan)
    - 2 layers (8 inches in diameter)
    - 12 small muffins (2 inches in diameter)
    - 8 large muffins (3 inches in diameter)
    - 1½ dozen macaroons (1½ inches in diameter)
    - One 8-inch pie
    - 8 servings
    - Six 1-cup servings

EDITORIAL

Los Angeles

Los Angeles, where the American Dietetic Association holds its twenty-second annual meeting, is situated on the Los Angeles River, twenty miles from its mouth, nearly 500 miles from San Francisco and 150 miles from Mexico. Because it was discovered on August 2, a special feast day on the calendar, it was named "Our Lady Queen of the Angels"—*Nuestra Senora la Reina de Los Angeles.*

The Plaza, the civic center of the Old Pueblo and where the fiestas were held, lies three blocks north of the county court house. Facing it is the "Church of Our Lady Queen of the Angels"—the city's oldest landmark. The church, restored several times, deserves to be starred on the list of places that members will wish to see.

Off the Plaza is Olvera Street, a bit of transplanted Mexico, charming, gay, full of life and color. Here you may watch corn being ground for the tortillas, and here you will find the native candle dippers and pottery workers. If you like Mexican food, La Golendrina will serve you.

Los Angeles is the home of Exposition Park which contains the Museum of History, Science and Art, and the State Exposition Building, a stadium with a seating capacity of 105,000. The museum contains Pleistocene fossils from the La Brea Asphalt Pits, where gases can still be seen bubbling. One of the smaller pits, fifteen by twenty-five feet with a depth of only thirty-five feet, has disclosed the remains of seventeen elephants and a number of mastodons.

Pasadena, well known for its Rose Parade and its "Mile of Christmas Trees", is fourteen miles northeast of Los Angeles and is one of the favorite winter resorts in Southern California. Here are located the famous Busch Gardens—75 acres of mingled formal gardens, wild woodland and miles of paths—Brookside Park, Rose Bowl Stadium, Devilsgate Dam, California Institute of Technology, Tournament Park, the Old Mill (a part of the old San Gabriel Mission) and the Henry E. Huntington Library, home of many world famous paintings. From Pasadena one may visit Mt. Lowe and also Mt. Wilson, where the Solar Observatory of the Carnegie Institute is located.

The mission nearest to Los Angeles is San Gabriel. Mission San Gabriel, fifth station on El Camino Real, and the fourth mission founded in the vicinity, is situated nine miles northeast of Los Angeles. This mission was founded by Fathers Somera and Cambon in 1771. A grist and sawmill built at the same time are still standing. The mission had 25,000 cattle and 15,000 sheep in 1829. The church has been restored, and the former monastery is occupied by a museum where John Steven McGroarty's "Mission Play" is given annually. Directly opposite still stands an old adobe house believed to be the one described by Helen Hunt Jackson as Ramona's birthplace.

Some believe that Hollywood owes its name to Father Serra who celebrated a mass to the Holy Wood of the Cross, while others believe that the name is due to the great amount of wild holly that grows near about. When Hollywood

was incorporated in 1903, it was still so rural that one of its first ordinances forbade the driving of more than 2000 sheep at a time down the main boulevard. The Hollywood as we now know it dates from 1911 when the motion picture industry was established. The village of Hollywood was annexed to Los Angeles in 1910.

Los Angeles and its environs offer those attending the twenty-second annual meeting of the American Dietetic Association an enticing blend composed of historic reminders of early Spanish civilization and modern industrial advancements.

Recent Findings in Nutrition[1]

It seems safe to say that no decade will be likely to surpass the present one in the volume and value of research on nutrition. Of all this work, vitamin studies are easily the greatest in number. It is almost unbelievable how rapidly new vitamin discoveries and data on vitamin functions are being published and compiled. This is well evidenced by the fact that during the course of two months, two authorities have presented talks on "Recent Findings in Nutrition" to the Greater New York Dietetic Association. The following are short excerpts from Dr. Grace MacLeod's discussion which was intended to bring the dietitian up-to-date. Dr. MacLeod referred to Holmes' *Have you Had your Vitamins?* as a recent book which both specialist and layman would enjoy because of its cleverly written text. She then summarized the more recent findings on the vitamins.

Vitamin A. Robinson[2] has reported findings on the stability of vitamin A to the effect that concentrates of this vitamin when heated in air or oxygen, increase in weight due to absorption of oxygen. Oxidation products result which are devoid of biological activity but still show spectroscopic absorption in the region of wave-length 328 mμ and give purple color with antimony trichloride. This may explain the discrepancies between the results of biological and of spectroscopic or colorimetric determinations reported for many commercial concentrates of vitamin A.

Abbott and Ahmann[3] (Florida Agricultural Experiment Station), have reported on changes in the blood picture of young rats during two successive periods of vitamin A depletion and recovery and of adult rats fed a diet low in vitamin A for a prolonged period. In the first period of depletion of the young rats, total leucocytes and polymorphonuclear cells increased but returned to normal after addition of carotene to the diet. In the adult rats and in the second period of depletion of the young rats, a decrease in leucocytes and polymorphonuclear cells took place with an increase in the number of large lymphocytes and juvenile forms. Degeneration of the marrow of the long bones was also observed. Logaras and Drummond[4] have shown in their experimental work that large doses (3000 I.U.) of vitamin A given daily counter-

[1] Abstract of an address by Grace MacLeod, Ph.D., before the Greater New York Dietetic Association, New York, January 9, 1939, as reported by Julia Hoover Peterson, chairman of publicity for the association.

[2] Robinson: Biochem. J., 32: 807, 1938.

[3] Abbott and Ahmann: Am. J. Physiol., 122: 589, 1938.

[4] Logaras and Drummond: Biochem. J., 32: 964, 1938.

acted the effect of thyroxine on the basal metabolism and the body weight of rats. Smaller doses, 10 I.U. daily, sufficed to promote satisfactory growth but had no effect on the basal metabolism. When the vitamin A content of the livers of the rats was determined it was found that the injections of thyroxine had conserved rather than depleted the stores of vitamin A in the rats which had been given the larger doses by injection.

Dr. MacLeod gave an interesting account of the use of the biophotometer for determining the vitamin A status of human beings. She said that after a number of enthusiastic reports had appeared in the literature to the effect that adaptation to dark could be used as an index of the vitamin A status of the human being, there began to appear reports throwing doubt either upon the method, or apparatus used, or both. In August, 1938, Isaacs, Jung and Ivy[5] reported that in a careful study of 20 apparently healthy adults they found no correlation between the vitamin A intake and the biophotometer readings and came to the conclusion that more study is required before the biophotometer can be used for detection of vitamin A deficiency in the human being. In October 1938 there appeared two reports, one by Snelling[6] in which a group of 34 school children were studied with and without additions of vitamin A to their diet. The results were so inconsistent that the author concluded that the biophotometer test is not a satisfactory method for measuring the vitamin A status of children. The other report, that of Booher and Williams,[7] presented the results of measurements on 106 adults using the Frohring biophotometer, which was calibrated for them at the Bureau of Standards. In view of their results they believe that "if the worker has suitable means for frequent calibration of the intensity of the light, the biophotometer may be adequate for detecting marked dysadaptation."

Hecht of the Columbia University Department of Biophysics is working on this problem at present using the adaptometer developed by himself and Shlaer. He believes that the fundamental trouble has been failure to standardize several important factors in apparatus and method. With his apparatus he has not found so high a proportion of individuals showing evidence of vitamin A deficiency as has been reported, nor such rapid, really spectacular recoveries upon administration of vitamin A. Hecht, as well as Haig, Hecht and Patek,[8] have also demonstrated that whereas the failure to adapt normally to dark after light was at first attributed to failure in the retinal rods, it really is equally attributable to failure of the cones. They have found almost parallel behavior of rods and cones during both deficient and recovery periods. This means association of vitamin A with visual purple in the rods and with the visual violet in the cones. Hecht and Mandelbaun[9] have made the very significant announcement that in

[5] Isaacs, Jung, and Ivy: J. A. M. A., 111: 777, 1938.

[6] Snelling: J. Pediat., 13: 506, 1938.

[7] Booher and Williams: J. Nutrition, 16: 343, 1938.

[8] Haig, Hecht, and Patek: Science, 87: 534, 1938.

[9] Hecht and Mandelbaum: Science, 88: 219, 1938.

patients suffering from cirrhosis of the liver there is a characteristic loss of sensibility to light in both cones and rods but that substantial additions of vitamin A to the diet brings improvement and adaptation becomes normal. In cirrhosis of the liver the flow of vitamin A from the food to the eye is apparently disturbed by the failure of the liver to function normally. Similar results are obtained in catarrhal jaundice. It is suggested that this test may well become an important tool for diagnosis in such pathological conditions. In the meantime, it is to be hoped that the different investigators of this problem will come to agreement with regard to apparatus and technic so that results from different laboratories may be more comparable.

Vitamin B_1. According to Williams and Spies,[10] vitamin B_1 or thiamin has been found to be needed by all animals that have been tested and is also essential for growth of many plants and micro-organisms. Its chief function appears to be the part it plays in the metabolism of carbohydrates. The thiamin requirements of man are proportional to the carbohydrate content of the diet. They point out that B_1 deficiency in man is more common than is generally recognized and believe that three points should be kept in mind in correcting this: (1) elimination of any conditions which may mean excessive requirements for vitamin B_1; (2) administration of B_1 in amounts adequate to correct the deficiency; and (3) suitable treatment of coexisting diseases.

Dr. MacLeod pointed out that crystalline vitamin B hydrochloride or thiamin chloride is now the international standard for determining vitamin B_1. The international unit, which has been adopted by the permanent commission on biologic standardization of the Health Organisation of the League of Nations, is defined as the antineuritic activity of 3 micrograms of the crystalline thiamin chloride. This definition calls for a curative method of assay rather than a growth method and several laboratories are now cooperating on the problems of standardizing a curative method.

Drill[11] reports a study on rats fed fixed daily amounts of a synthetic diet containing adequate vitamin B_1 (supplemented in some cases by crystalline vitamin B_1) in which half of the number of rats studied were given 100 mg. of desiccated thyroid daily. These animals all lost weight and some died. After 17 days the rats were killed and the vitamin content of various organs determined by the yeast fermentation test. The vitamin B_1 content of the liver and kidneys of the animals fed thyroid was found to be significantly lower than that of the corresponding group not receiving thyroid. The muscle and spleen were unaffected while the effects upon the heart muscle were not consistent. The multiple nature of the deficiency producing pellagra was demonstrated by Spies and Aring[12] in 6 cases of peripheral neuritis accompanying pellagra of the alcoholic or endemic type. Whereas nicotinic acid cured the stomatitis, glossitis and lesions of the mucous membrane, it did not influence the peripheral neuritis. This was, however, remedied by intravenous administration

[10] Williams, R. R., and Spies, T. D.: Vitamin B_1 (Thiamin) and its Use in Medicine, New York: The Macmillan Co., 1938.

[11] Drill: J. Nutrition, 14: 355, 1937.

[12] Spies and Aring: J. A. M. A., 110: 1081, 1938.

of crystalline vitamin B_1. Oral administration was not always successful because of failure in absorption.

Drummond and his co-workers[13] have reported the results of an investigation begun in 1931 in which over 1000 rats have been observed. Approximately half the animals were kept on a diet adequate in all known respects while the rest were on the same diet except that the vitamin B complex intake was cut down to a level that would keep the animals in a state of chronic undernutrition with respect to the B vitamins throughout their lives. His records show: (1) the life span was shortened and reproduction adversely affected by the deficiency of vitamin B; (2) post-mortem examinations showed significantly greater incidence of gastro-intestinal lesions, particularly ulcerations, in the animals on the deficient diet than in the controls; (3) the deficiency did not influence the incidence or severity of the chronic lung infection common in laboratory rats; (4) the incidence of all other disorders was about the same in the two groups; (5) no evidence of increased susceptibility to tumors, malignant or benign, was found in the B-deficient animals.

Vitamin B_6. Keresztesy and Stevens[14] have reported the formula $C_8H_{11}NO_3$ for their crystalline product obtained from rice polishings and this has been confirmed by other workers. The name "adermin" has been proposed for the pure vitamin B_6 by Kuhn and Wendt[15] who obtained their crystalline product from freshly prepared yeast juice. The free vitamin crystals are described by Lepkovsky,[16] who isolated his product from a fullers' earth adsorbate from rice polishings, as rodlike or needleshaped. He found that 5 micrograms daily of the crystals caused increase in weight and cured dermatitis in rats which had declined in weight and developed dermatitis on a synthetic diet containing all other known fractions of the B complex.

Vitamin C. Giroud and Giroud[17] have reported observations covering four years on large numbers of guinea pigs. Their records show that during various spontaneous epidemics the morbidity and mortality rates were much higher in the groups of guinea pigs receiving a diet low in vitamin C than in those receiving liberal amounts of the vitamin. Among the organisms isolated during the epidemics were pneumococci, streptococci, the bacillus of pseudo-tuberculosis, and various gram-positive cocci.

Weisberger, Young and Morse[18] of the Harvard Dental School in a study of 65 patients found that those showing a concentration of ascorbic acid of 0 to 0.8 mg. per 100 cc. of blood usually had congested gums while the older members of this group often had bleeding gums and looseness of teeth in addition. To each of 15 members of the group, a total of 2 gm. of ascorbic acid was given in the course of two weeks. The ascorbic acid

[13] Drummond, Baker, Wright, Marrian, and Singer: J. Hygiene, 38: 356, 1938.

[14] Keresztesy and Stevens: J. Am. Chem. Soc., 60: 1267, 1938.

[15] Kuhn and Wendt: Berlin deutsch. Gesellsch. 71: 780, 1938.

[16] Lepkovsky: J. Biol. Chem., 124: 125, 1938.

[17] Giroud and Giroud: C. R. Soc. Biol., 128: 606, 1938.

[18] Weisberger, Young and Morse: J. Dent. Res., 17: 101, 1938.

in the blood rose to a level considered normal by the end of the first week but improvement in gums and teeth was not seen until the end of the second week.

Taffel and Harvey[19] of the Yale Medical School investigated the effect of different levels of vitamin C on the healing of wounds by making incised wounds in the gastric wall of guinea pigs, some of which were fully supplied with vitamin C while others were wholly or partially deprived of the vitamin. At intervals between 4 and 14 days after the operation, the animals were killed and the strength of the partially healed wound was determined by distending the stomach to the bursting point with air. The tensile strength of the wounds was usually less in the scorbutic animals than in those on higher levels of vitamin C. The inferior strength of the wound was most marked 8 to 10 days after the operation, and the authors note that it is known clinically that most wound disruptions occur during this post-operative period. These results confirm the earlier suggestions of Lanman and Ingalls[20] that vitamin C deficiency due to dietary inadequacies, even when only partial, may be one cause of wound disruption even when there is no evidence of wound infection.

From England, Norway, Russia, Germany, Brazil, Denmark, Poland, India, the Philippines, South Africa, and laboratories here in the United States, investigations to determine the vitamin C potency of the native foods of these countries and the effects of different methods of cooking upon the vitamin C potency, are being reported. Also one notes with interest the studies of the effects of different fertilizers in the soil upon the vitamin C content of the crops.

From several different countries have come reports of experimental proof that vitamin C plays a rôle in protecting animals against such infections as pneumococcus, diphtheria, bacillary dysentery, and other bacterial toxins and that in these infections there is increased destruction of vitamin C in the body. Hence the importance of increased intake of this vitamin in such conditions.

Vitamin D. Erpf,[21] of the Hooper Foundation in San Francisco, reports on regular dental examinations over a period of 2 years on 143 patients in which he found seasonal variation in the incidence of caries, higher values being found during the winter than during the summer season. The author shows that this fluctuation in the occurrence of caries varies inversely with the intensity of the ultraviolet content of sunlight. McBeath and Zucker[22] have reported the results of observations over a period of 4 years on children, in 6 schools, varying in age from 6 to 14 years. In all they obtained records on 601 experimental (these either had additions to their diet or were subject to ultraviolet irradiation) and 270 control cases. The work was carefully planned and well controlled and led to interesting, clean-cut results as follows: (1) that the greatest incidence of caries occurred in late winter and early spring with very low incidence during the summer; (2) that administration of

[19] Taffel and Harvey: Proc. Soc. Exp. Biol. Med., 38: 518, 1938.

[20] Lanman and Ingalls: Am. Surg., 105: 616, 1937.

[21] Erpf: J. Am. Dent. A. and Dental Cosmos, 25: 681, 1938.

[22] McBeath and Zucker: J. Nutrition, 15: 547, 1938.

graded amounts of natural vitamin D as vitamin D milk resulted in graded caries prevention—of the three amounts used (250, 400 and 800 I.U. daily) only the highest prevented an increase during the season of highest incidence of caries; (3) fortifying the diet with protective foods or simply increasing the allowance of milk in the diet with no addition of vitamin D led to a moderate reduction in caries; and (4) a reversal of control and experimental régimés during two successive years in over 100 cases showed that individual susceptibility to caries was negligible as compared with the effect of nutritional factors.

These results are in line with those reported by the United States Public Health Service from a survey of tooth decay in over 1,400,000 children in the United States. It was found that in children 12 to 14 years of age more tooth decay occurred north of the Mason and Dixon line than south of it. These seasonal and regional differences are in part explained by the difference in the length of day at different seasons, and also in part by the fact that there is variation in the radiations in the vitamin D-forming range which reach the earth. For example, Janet Clark in her studies in Baltimore found that solar radiations in the vitamin D-forming range were from 10 to 15 times as intense at midday in July as at midday in December. And more recently Knudson and Benford[23] have reported that in the ultraviolet range some wave-lengths are much more effective in curing rickets in rats than others; in winter, it is only the least efficient wave-lengths that reach the earth. Another interesting finding in their work is that the very wave-lengths which are most effective in forming vitamin D are also the most destructive of the vitamins if applied too long.

In closing, Dr. MacLeod called attention to the spreading interest in the relation of diet to health and disease. In a single issue of *Nutrition Abstracts and Reviews*, that for October 1938, are reports of dietary studies which have been made in Germany, England, Russia, Wales, Norway, Sweden, Denmark, Italy, Hungary, South Africa, East Africa, India, Dutch East Indies, Ceylon, Brazil, and our own country.

[23] Knudson and Benford: J. Biol. Chem., 124: 287, 1938.

CURRENT COMMENT

The College Course in Diet in Disease

The course in "Diet Therapy" or "Diet in Disease" as given in our undergraduate college curriculum today, is subject to as many variations as there are courses offered. Many of these courses are under fire from directors of hospital training courses, and may suffer seriously from misunderstanding and adverse criticism unless the problem is brought out in the open. From the point of view of a college instructor who has offered such a course for the past fifteen years and attempted to meet student needs, I wish to express some opinions which, it is hoped, may stimulate discussion.

Nearly all administrators in the field of professional education face problems as to the best background material to offer students as part of their under-

graduate preparation. Training for the profession of the dietitian is no exception. Those interested in this training know the thoughtful consideration, pro and con, which the officers and committees of the American Dietetic Association have given to each subject listed under requirements for admission to approved training courses.

"Diet in Disease" is a recommended or required subject for entrance into most approved student dietitian courses today. Yet the remark not infrequently heard from the director who accepts these students for training is that she spends too much time in "unteaching" what the student learned in college regarding diet in relation to disease. Another director may comment that students are impractical in their ideas, or do not readily accept ideas and practices which are opposed to those learned in college. The student is too dogmatic. To be sure, the college cannot be responsible for the all too numerous student faults, nor insure that high degree of adaptability which is desirable. But the college should recognize its responsibility for teaching students how to use the tools of fundamental knowledge in the applied fields. "Diet in Disease" offers an excellent opportunity for the student to apply fundamental facts and principles of chemistry, physics, physiology and normal nutrition to the metabolic problems of disease.

The criticisms cited above might be met collectively if the objectives of the college course were more carefully planned to meet student needs. Such a course should aim to give some understanding of the metabolic problems involved in disease, and the nutrition principles which may need modifying to meet these emergencies. A successful dietitian needs a clear picture of the metabolism of the diabetic and the possible complications before she starts writing diabetic diets to fill a doctor's arbitrary prescription. A dietitian needs to understand the pathologic conditions which interfere with digestion and absorption before she plans a diet for an ulcer or a colitis patient. A dietitian must keep ever in mind the principles of normal nutrition when dealing with disease.

Does the average college course afford enough time for both the theoretical considerations and the practical application? Have not student training courses been designed primarily to give the practical experience? It is neither practicable nor possible for many college courses in "Diet in Disease" to be taught by a hospital dietitian with recent experience. Those of us who lack this experience and background, and frankly recognize the desirability of it, nevertheless feel that some of the criticism leveled at courses taught from the theoretical and scientific point of view is not entirely justified. An open discussion of the subject by a group of student dietitians and recent graduates serves to confirm the opinion here expressed, namely: that the time in a college course does not permit both approaches, and that if they had to choose, it would be for the college course to furnish the theoretical background, and the hospital or other type of training course to offer the practical experience.

When a college curriculum allows but three credits for "Diet in Disease," it is a question whether any of that time can well afford to be spent in the laboratory. Class discussion, lecture, and re-

ports on current literature may require all of the time available. When a fourth credit is allowed, laboratory work may profitably be introduced, affording some work in invalid cookery, and more practice in the planning of special diets, with some field work in a nearby hospital, if convenient. To be sure, work in the dietary department of a hospital during the summer between the junior and senior years is considered valuable experience both by the students who have tried it, and by the college faculty who have encouraged it. The hospital atmosphere allows a student to make up her mind as to her fitness for the position of hospital dietitian. Most of these positions afford but a minimum of experience with therapeutic diets, however, and are in no sense a substitute for later training. The formal hospital training course does serve as the laboratory for those students who have had only the lecture and discussion type of course in college. In many instances, the end results are quite as satisfactory.

What, then, should be the objectives of a college course in "Diet in Disease"? In addition to the tools of scientific knowledge which a home economics student should bring with her to such a course, she needs to add some new ones. She must build up a vocabulary of medical terminology, and some elementary knowledge of pathology. In many instances, this is the first contact the student has had with a medical science. Sometimes a morbid curiosity and an attitude of mystery about disease must be replaced by a scientific approach to the problem. The student should become familiar with the current medical literature as it applies to nutritional problems in disease. She should begin to realize then, if not before, that no textbook can be the last word, or give all points of view, in a rapidly developing science; that new and contradictory ideas must be given consideration; and that new applications of old ideas are continually being proposed. The factual information learned from the text may be far less important than the acquiring of an open mind, a critical attitude, and a scientific curiosity to watch for new developments and be willing to contradict the textbook if necessary. Dr. Mendel once said to some of his students several years after they had graduated: "I hope you are not teaching your students what I taught you." He considered that he had failed as a teacher unless he had stimulated his students to reach far beyond what they learned in his course in college. All of us, whether college instructors or dietitians, must avoid dogmatic, rule-of-thumb teaching if we wish our students to keep on growing after they leave us.

College Instructors: Are we going to meet the challenge and the criticism by teaching our students to think and use the fund of information which they should have accumulated from this and prerequisite courses and send them out open-minded and awake to changing ideas of diet in the medical world, or are we going to continue sending out "textbook" dietitians?

Directors of Student Courses: Is a fundamental course in the theory of metabolism and dietary treatment of disease a satisfactory background for your student dietitians? Are you willing to offer the practical training that these students need if we provide the best possible background on which to base it?—HELEN S. MITCHELL, *Massachusetts State College, Amherst.*

Food Editor Wins Newspaper Award

Edith M. Barber, national publicity chairman for the American Dietetic Association and editor of a food column for the New York *Sun*, was the recipient of an annual award for outstanding work in special feature writing. The four prize winners, Miss Barber of the *Sun*, Kathleen McLaughlin of the New York *Times*, Janet Owen of the New York *Herald Tribune*, and Jane Dixon of the North American Newspaper Alliance, were chosen by a jury of five from a total of 200 entries. Each of the four women so honored was awarded a prize of $100 which was presented by Mrs. Franklin D. Roosevelt at the annual Front Page Ball of the New York Newspaper Women's Club on the Starlight Roof of the Waldorf-Astoria, February 10. The award to Miss Barber was based on her food columns entitled "Mexico and Mexican Dishes", "Menu for a Last Breakfast" and "Old Pennsylvania Homesteads".

The competent connoisseur of foods, whether hospital dietitian, college and school lunchroom manager, or food column editor, should be equipped with an efficient digestive tract that permits a hearty breakfast appetite. Miss Barber obviously qualifies with a healthy morning appetite, and possessed with a facile and descriptive pen, she demonstrates the gustatory possibilities of a last breakfast in the following excerpts:

> My last breakfast on earth? What would I choose? As long as this is a material dream, first of all I would wish for a large appetite and an enlarged capacity, so that I might indulge for once in all my favorite foods. A special dispensation would, on second thought, not be necessary as far as appetite is concerned. All I would need would be the tantalizing odor of bacon sizzling in the pan! It's like raw meat to a tiger!...
>
> For my last breakfast on earth, therefore, I would like the capacity to make up for all the lean days in the years. I would not leave out that long glass of orange juice, without which I cannot now begin my day. Perhaps I would increase the number of cups of coffee, the fragrant, sparkling first necessity of breakfast. And, of course, there must be plenty of rich cream to go with it. In fact, I would demand an enormous pitcher of cream to use not only with my coffee, but with that huge dish of old-fashioned oatmeal which has cooked for hours in order to be worthy of being on the menu of my last breakfast.
>
> What next? First of all there must be bacon, cooked just to a turn, not too soft and not too crisp and plenty of it. As long as this is a dream, I will have as well frizzled beef, or I might have well-browned sausages. And I might have buckwheat cakes with maple syrup. You might just pass me all of them. And then I must have toast, thin, crisp, but not too crisp. It must be buttered while it's hot, no diet toast for me. With it I would like some honey-in-the-comb or (possibly "and") some orange marmalade. What else? Nothing but Philadelphia, sticky, cin'mon buns, hot soft on the inside and crisp on the outside and served with plenty of butter. Do you wonder that I wished for a large appetite....

Her column on "Old Pennsylvania Homesteads" will awaken nostalgia in the minds of those who appreciate yet acknowledge the coldness of the modern streamlined kitchen. Miss Barber describes the ancestral stone house during

her grandparents' day, the kitchen of which was the heart of the home. Today:

> . . . there is central heating and the log fires are more for ornament than for warmth. The huge fireplace with its bake oven in the kitchen has been bricked up, and in front of it there is an electric stove. In my grandmother's day there was a range, originally designed for wood, but which was, in her time, fed with coal, an advance in convenience, which she thoroughly appreciated. The Dutch oven of the fireplace was heated and used for large baking for special occasions. . . .
>
> A modern refrigerator has replaced the outdoor spring house, where milk in shining tin pans was set for the cream, part of which was used for making butter. Cottage cheese or *smierkase*, as it was called in that Pennsylvania Dutch country, was made regularly, of course. The preserves from the fruits of the orchard which stretched from the house to the banks of the creek were cooked in a huge iron kettle over an outdoor fire, where also the year's supply of soap was made. This also served for making head cheese, "souse" and scrapple, when a pig was killed. These supplies were kept in the great cool cellar, which also stored the winter vegetables and fruits. There were kept the always filled cookie jars and the batter for a famous spice cake which could be put into pans and baked when company arrived. The recipe divided several times, but taken from my great-grandmother's cook book, appears today. . . .
>
> In those olden days, when visitors came to spend a day or a week, when families were large and when there were always several spinster aunts living in the household, every home was a miniature factory in itself. The daughters of the house were trained in every household art. Liberality without waste was the order of the day. "A good housekeeper," said my grandmother, "scrapes her bread boat."

Food Clinic Training in Correlation With the Social Service Department

The increasing emphasis on the nutritionist in public health demands that the dietitian have an insight into the purposes and methods of those agencies and departments that work with her in carrying out plans for the patient. This is important not only for the dietitian who works with the patient outside the hospital but also for the dietitian in the hospital so that her teaching of the diet to the patient may be effective.

With the above thought in mind the service of the student dietitian in the nutrition clinic in Cook County Hospital has been planned so as to include a short period of work with the social service department of the hospital. It was believed that work with a department within the hospital would integrate the plan for the patient, so that the student dietitian might follow that plan from the hospital into the home.

The student dietitian comes to the nutrition clinic after services on both medical and surgical wards so that she knows the problems and methods of service and teaching within the hospital. The first two weeks of her service in the nutrition clinic are spent in the clinic learning the methods and problems of instructing the patient in the outpatient department concerning his diet. This service teaches her what informa-

tion is necessary for proper interpretation of the diet and how to obtain this information. Such a background of method and experience prepares the student to be alert to the problems which the home presents.

The second two-week period of training in the nutrition clinic is spent with the social service department. The student dietitian works directly under the supervision of the staff of the social service department and in this way becomes familiar with the organization of the department; the function, philosophy and methods. The student dietitian learns how to interview the patient, how to interpret properly and write up social service records and also becomes familiar with agencies and facilities which are available in planning for the follow-up care of the patient.

The work done by the student dietitian in her social service department is directly related to her dietary work. Her home calls are made on patients who have problems in connection with the interpretation, purchase or preparation of the therapeutic or normal diet. The student dietitian is given the background of the case by the social worker who referred the case to her, the dietary instructions are given either by the dietitian on the ward where the diet was given or by the dietitian in the nutrition clinic as the case may be.

When the case is one of interpretation or preparation the home facilities for cooking and the activities of the patient and his family are investigated. The diet is then adjusted to the home situation and the family. If the difficulty is one of purchasing the food the student dietitian is given the opportunity to learn where and how the food is purchased and so may help the family with suggestions concerning the budgeting of the food money. This practical application of the work in diet therapy and food purchasing helps the student to integrate her knowledge and is a real test of the effectiveness of her training.

The student dietitian returns to the nutrition clinic for two weeks after her service with the social service department. She is well equipped to bring to the clinic patient both her knowledge of methods previously learned and an increased understanding of the problems to be encountered and the points to be emphasized in guiding the patient to follow the diet in the home.—MARTHA WARNE, *Assistant Director in charge of Nutrition Clinic, Cook County Hospital, Chicago.*

MAY DAY—CHILD HEALTH DAY 1939

Katharine Lenroot, chief of the Children's Bureau of the United States Department of Labor, is sponsoring the slogan, "The Health of the Child is the Power of the Nation", in connection with the annual observance of "Child Health Day" on Monday, May 1, 1939. The objective of this program is to bring to the attention of each community:

(1) The importance to the child's health, development, and well-being throughout life, of proper food, rest, exercise, medical care, and protection against disease;
(2) the ways of informing parents and others how child health may be safeguarded; and
(3) the means whereby such safeguards may be made available for all children.

Directed by state health officers in cooperation with departments of education, programs for the observance of child health day are being developed in the schools. This annual observance is intended to emphasize the ways in which the year-round health program may be strengthened. As a climax to the year's health education programs in schools, it is suggested that the children show by exhibit, demonstration, programs, and plays what they have learned about safeguarding their own and the community's health, and celebrate in festivals and games, progress made during the year.

Those interested should write in to the May Day chairman of their state department of health. The Bureau suggests a survey to be made in preparation for Child Health Day, 1939. Among the points to be considered of particular interest to dietitians are the following: (1) Can all expectant and nursing mothers obtain reliable information on their food needs? (2) Can all mothers obtain health supervision for their babies and growing children? Does this health supervision include information on food needs of children? (3) Do most of the mothers in the community know that these services are available? Do those that need these services most take advantage of them? (4) Are vacation camps, nursery schools, special classes, or other facilities available for improving the condition of undernourished children? (5) Do hospitals, maternity homes, and child-caring institutions have the consultation service (if not full-time service) of a trained dietitian? (6) Are the nutritive quality and cleanliness of milk and other essential foods sold in the community ensured through adequate legislation and regulation? (7) Is the nutrition of children safeguarded by other health services? (8) Do schoolboys and schoolgirls who present special nutritional problems receive attention and care according to their individual needs? (9) Do the schools consider the feeding of children at school as part of the health-education program? As such, is it supervised by a worker who knows the nutritional needs of children? (10) Is the sale of unsuitable foods on the school premises forbidden as contrary to a sound program of nutritional education? (11) Do boys' and girls' organizations stimulate interest in good nutrition as an end in itself as distinguished from interest in competitive awards for health achievement? (12) Do health and educational agencies cooperate in spreading sound information on nutrition? Do they help the public to discriminate between sound and unsound information that is disseminated from other sources? (13) Is the nutrition of mothers and children promoted by other educational programs?

BOOK REVIEWS

Diets of Families of Employed Wage Earners and Clerical Workers in Cities. By Hazel K. Stiebeling, Senior Food Economist and Esther F. Phipard, Associate Economist, Economics Division, Bureau of Home Economics. Circular No. 507, U. S. Dept. of Agriculture. Washington, 1939, pp. 141. For sale by the Superintendent of Documents, Washington, D. C. Price 15 cents.

This new bulletin details the eating habits of typical American city families and shows how their diets compare with present-day nutrition standards. The first attempt at such an evaluation was made by Atwater in 1886. Another important contribution was that of Sherman and Gillett in 1914 when a study was made of 92 low-income families, chiefly in New York City. It is pointed out that in the ensuing 20 years following the Sherman and Gillett study, during which great advances have been made in the science of nutrition, the allowances proposed by Sherman and Gillett for an adult man have been changed but little.

Of all the dietary studies that have been made in this country the most extensive so far undertaken is the one here reported. The study was based on about 4000 records of a week's food consumption that had been compiled by a division of the U. S. Bureau of Labor Statistics. In summary the authors state that compared with Sherman's suggestions for the allocation of food money the results of this study of the diets of employed workers are quite at variance. Whereas Sherman suggests that as much be spent for milk and cheese, and also for fruits and vegetables, as for meat, poultry and fish, the white families included in this study spent from one-fourth to one-third of their food money for eggs, lean meat, poultry, and fish; from one-fifth to one-fourth for vegetables and fruits; but only one-eighth to one-sixth for milk and cheese. The negro families spent almost one-third for eggs, meat, poultry, and fish, about one-sixth for vegetables and fruits, and only 6 per cent for milk.

Ruth Van Deman, chief of the Information Division, Bureau of Home Economics, states that Dr. Stiebeling is already working on a similar study that will cover the analysis of small cities and villages. It is believed that the two studies will then present an authoritative picture of American food habits.

Flavor's The Thing. By Florence La Ganke Harris. New York: M. Barrows and Company, 1939, pp. 319. Price $2.00.

This is a collection of recipes characteristic of the more delicious culinary offerings of many lands. Most of the dishes are as distinctive and as time-honored as the folklore of the people from whom they originated. Mrs. Harris has sternly rejected all offerings, whether typical of a given country or not, which do not measure up to her high standards for flavor in food. She looks upon flavor in food as both God-given and man-made. She wants no namby-pamby mixtures, no cloyingly sweet messes. "Flavor's the thing" but texture, appearance and service are inseparable bolsters to flavor. To Mrs. Harris "lettuce leaves set under a food" do not make it a salad, nor do Surrealist picture compositions have a place in the salad course.

That her literary perception matches her discernment with regard to food is indicated by such lines as "amber consummé, sharp and clear as an elfin horn" and "a successful sauce complements a dish, adds suavity, sprightliness, richness, savor or interest".

The reader interested in food customs of foreign lands will be pleased to find a chapter on "Foods for Days of Feasting and Fasting" and another on "Calendar of Holidays and Their Foods" in which are detailed the special foods served in countries of the Christian world on religious and other festivals.

Other chapters stress the finer nuances of cookery: the use of herbs, spices, and other seasonings, of which many are mentioned such as rosemary, thyme, saffron and chives, that appear all too seldom in American cookery.

Mrs. Harris has taken no liberties with her collection of recipes. While all have been tested in her model kitchen, her zabaglione and Bath buns are authentic despite the modern arrangement of the recipe. However, she permits herself some italicized editorial "asides" in which it is suggested that the electric beater will help out with the zabaglione, and that, woman to woman, you'll be safer if you disregard the floured pudding cloth for your

English Christmas pudding and use a mold. But if you scorn Christmas pudding not boiled in a bag "—if you do—the chances are you have your own family heirloom recipes, and do not need this one or directions for cooking." Altogether the book has a refreshing, light approach quite lacking in the common garden variety of cook book.

International Institute Cook Book. Edited by The International Institute, Andover, Mass. Boston: Recording and Statistical Corporation, 1938. Price $2.00.

This is a collection of recipes assembled under the direction of the Ways and Means Committee of the Lawrence International Institute, Andover, Mass. The recipes have been collected from women of thirteen nationality groups—Armenian, British Isles, French, German, Greek, Italian, Lithuanian, Polish, Russian, Scandinavian, Spanish, Mexican and Syrian, and the melting pot that is America. The recipes have been hand-lettered by Lillian Bruce with charming illustrations by Annette A. Bernardin. The whole comprises an artistically pleasing and most unusual book. Those interested in representative cookery from foreign lands, and the collector of interesting cook books will find this an invaluable addition to their libraries.

Public Speaking for Women. By J. V. Garland, Director of Debate, Instructor in Public Speaking, Colgate University. New York and London: Harper & Brothers, 1938, pp. 315. Price $2.50.

Woman's obligation to enter the field of public speaking, other than in Thespian rôles, is one of the penalties of their 20th century emancipation and attendant obligation to become engaged in public affairs. Most women approach this responsibility with many misgivings, for few can successfully compete with men as public speakers. During the first decade of this century the mere and novel fact that a woman was to give a public speech was enough to draw and hold a crowd. Today, women as public speakers, regrettably or not, are no longer a novelty and their speeches must conform to accepted standards of manner and material and yet bear the flavor of individuality.

To give them that confidence, knowledge and skill so essential if one is to please the exacting audiences of today, is the purpose of the book under review. The author tells you how to prepare speeches for different purposes: welcome, greeting, response, presentation, acceptance, farewell, dedication, anniversary, eulogy, after-dinner, and so on. He supplements his suggestions with sample speeches as presented by seasoned speakers.

Other interesting and pertinent features of the book that will especially appeal to members of dietitians' organizations are chapters on the preparation of the book review and radio broadcast; the planning of discussion meetings, including a verbatim account of a panel discussion; appendices which detail method of procedure in speech preparation; "seven rules for speakers"; and a "progress chart" with which the prospective speaker may check essential points, in advance of her performance.

CURRENT LITERATURE

American Journal of Digestive Diseases

Vol. 5, February 1939

*Problems of maintaining nutrition in the highly food-sensitive person. W. C. Alvarez.—p. 801.
*A report of 10 cases of pellagra treated with nicotinic acid. V. H. Musick.—p. 807.
*Anorexia and gastric motility. D. P. Gulliksen, A. Fogelberg and L. Kardos.—p. 814.
*Is the stomach an essential organ? J. S. Gray.—p. 817.

FOOD-SENSITIVE PERSON. Approximately 60% of Americans are somewhat food-sensitive, and perhaps 2%, highly sensitive. Allergists have been mainly concerned with the taking away of foods. More attention should be paid to the replacing of the hurtful foods with harmless ones. Suggestions have been made as to some new foods chosen from the world's market which might be tried. There is need in all large cities for bakeries that will supply breadstuffs made without wheat, egg or milk.

PELLAGRA TREATED WITH NICOTINIC ACID. Nicotinic acid, 50 to 500 mg. per day, is specific in curing the acute dermatitis and glossitis of the Goldberger type of pellagra. Prolonged use of 150 to 500 mg. of nicotinic acid a day will cure the chronic dermatitis with abrasion and chronic glossitis of typical pellagra. Doses up to 500 mg. will partially control the diarrhea. Nicotinic acid from 50 to 500 mg. a day is of very little aid in the treatment of the neuritis and mental symptoms associated with pellagra in humans except those with acute delirium. The general health of the pellagrous patient is only slightly enhanced by treatment with nicotinic acid. Probably other factors are necessary for complete cure.

ANOREXIA AND GASTRIC MOTILITY. Thirteen children in a group of 200 were found to have low food intake and moderately or definitely poor appetites. Records on hunger contractions showed that these children had a greater number of contractions, a shorter interval between activity periods, and hunger contractions less vigorous in height and duration than the children of a control group having good or hearty appetites. Small appetites may be due to the lack of hunger sensations. In the anorexic children, the already weak gastric activity is more easily inhibited on slight distention with food, with a resultant small food intake.

IS THE STOMACH AN ESSENTIAL ORGAN? The experimental work with gastrectomized animals shows that the stomach cannot be considered an essential organ in the strict sense of the word. The stomach is more important in the economy of the growing than in the adult organism and more important in the pregnant female than in the male. Proper nutritional care is indispensable in maintaining health in animals without a stomach and probably also in men and women similarly handicapped.

American Journal of Diseases of Children

Vol. 57, January 1939

*Circulatory function in the anemias of children. I. Effect of anemia on exercise tolerance and vital capacity. C. G. Parsons and F. H. Wright.—p. 15.
*Basal metabolic rate in children with abnormal bodily dimensions. M. de Bruin.—p. 29.

CIRCULATORY FUNCTION IN ANEMIA. One of the remarkable features in children suffering from severe but chronic forms of anemia is the absence of apparent restriction of their ability to take exercise. Children with a red blood cell count of 2,000,000 or less may play with all the vigor of their healthy brothers and sisters.

BASAL METABOLIC RATE. Basal metabolic rates were estimated for 120 normal boys and 123 normal girls whose body weights ranged from 6 to 46 kg. Standard curves for normal children were drawn up according to weight. Basal rates were similarly determined for 107 children with abnormal body dimensions. Standards are given for determining the basal rates of children of abnormal size.

American Journal of Medical Sciences

Vol. 197, February 1939

*The blood plasma ascorbic acid in patients with achlorhydria. (Pernicious anemia and iron deficiency anemia.) H. L. Alt, H. Chinn and C. J. Farmer.—p. 229.

ACHLORHYDRIA. The blood plasma ascorbic acid was determined in 44 patients with achlorhydria associated with pernicious anemia or

iron deficiency anemia in remission or relapse, and in 24 controls. With diets adequate in vitamin C, the mean blood ascorbic acid was significantly decreased from the normal in the patients with pernicious anemia, but not in the iron deficiency group. With diets inadequate in vitamin C, the plasma ascorbic acid was significantly decreased from the controls in both groups. Plasma ascorbic acid showed no correlation with the erythrocyte counts and hemoglobins.

American Journal of Public Health

Vol. 29, February 1939

*Dextrose in the food industries and its health status. C. R. Fellers.—p. 135.

DEXTROSE. Dextrose or refined corn sugar is a relatively new sweetening and preserving agent in the food industries. It is chiefly made by the hydrolysis of starch, followed by processes of refining and crystallization. The total sugar consumption per capita in our country is about 115 pounds. Dextrose makes up a relatively small part of the nation's sugar bowl at present. Dextrose is of high purity, approximately 75% as sweet as sucrose, somewhat less soluble and its nutritional equivalent. Dextrose syrups possess greater bactericidal action against yeast and bacteria than sucrose. Dextrose is now used very extensively in soda fountain syrups, carbonated beverages, candy, bread, ice cream, jams, preserves, pickles, condensed milk, meats and canned foods. Dextrose is absorbed from the intestinal tract more rapidly than sucrose. Refined dextrose as marketed today in the United States presents no important public health problems.

American Journal of Physiology

Vol. 125, February 1939

*Acute riboflavin deficiency in the dog. H. R. Street and G. R. Cowgill.—p. 323.

ACUTE RIBOFLAVIN DEFICIENCY. Dogs maintained on a diet containing not more than traces of riboflavin were found to collapse in from 102 to 140 days. The injection of 0.75 mg. of crystalline riboflavin per kg. of body weight resulted in prompt recovery. Supplementation of the basal riboflavin deficient diet with 25 micrograms of riboflavin per kg. of body weight maintained dogs in health for an extended period.

Hygeia

Vol. 17, February 1939

*"My child simply won't eat!" R. P. McLeod.—p. 116.

"MY CHILD SIMPLY WON'T EAT!". Lack of sleep is a prime factor in killing appetites. Regularity in habits is one of the therapeutic measures necessary in correcting the poor appetite. The day should be started the night before with sufficient sleep in a well ventilated room. Bathing, and cleaning the teeth are vitally important factors. Arguments, heated discussions or the telling of an upsetting story at the table should be avoided. Constant changes in menu tempt a child's appetite. The "outdoor" child is healthier and happier than the one who remains indoors.

Journal of Biological Chemistry

Vol. 127, February 1939

*The influence of optical isomerism on the utilization of tryptophane, histidine, and lysine for growth in the mouse. J. R. Totter and C. P. Berg.—p. 375.

OPTICAL ISOMERISM AND GROWTH. The optical isomers of natural tryptophane, histidine, and lysine have each been prepared and fed to mice in diets deficient only in the corresponding natural form. The growth promoted by the unnatural isomers of tryptophane and histidine is slower than that induced by the modifications which naturally occur in proteins. Unnatural lysine fails to promote growth when added to diets deficient in natural lysine.

Journal of Clinical Investigation

Vol. 18, January 1939

*A long term study of the variation of serum cholesterol in man. K. B. Turner and A. Steiner.—p. 45.

SERUM CHOLESTEROL VARIATIONS IN MAN. The serum cholesterol of an individual tends to remain remarkably constant throughout the day, from week to week and from month to month regardless of the feeding of a breakfast rich in cholesterol. Thyroid administration produced a sharp drop in serum cholesterol in every case. This was accompanied by a rise in the basal metabolic rate. A diet high in fat seemed to cause a slight rise of dubious

significance in the serum cholesterol in 4 of 9 patients. This increase was not augmented by the addition of cholesterol to the diet in 3 cases. A diet low in fat failed to influence the level of the serum cholesterol.

Journal of Nutrition

Vol. 17, February 1939

*A quantitative study, by means of spectographic analysis, of zinc in nutrition. F. I. Scoular.—p. 103.
*Rat acrodynia and the essential fatty acids. F. W. Quackenbush, B. R. Platz and H. Steenbock.—p. 115.
*A long-time study of nitrogen, calcium and phosphorus metabolism on a low-protein diet. B. L. Kunerth and M. S. Pittman.—p. 161.
*A long-time study of nitrogen, calcium and phosphorus metabolism on a medium-protein diet. M. S. Pittman and B. L. Kunerth.—p. 175.
*A study of breed and seasonal variations in the ascorbic acid content of certified milk from Guernseys and Holsteins. A. D. Holmes, F. Tripp, E. A. Woelffer and G. H. Satterfield.—p. 187.

ZINC IN NUTRITION. Thirty-five zinc balance studies have been made with 3 normal boys of preschool age. From 0.04 to 6.0% of the ingested zinc was eliminated through the urine. The rest of the excreted zinc was eliminated through the alimentary tract. Zinc is associated with physiological functioning. It is tentatively concluded that 0.307 mg. of zinc per kilogram of body weight will supply the zinc needs of the preschool child.

ACRODYNIA AND FATTY ACIDS. On a basal diet of purified casein, glucose and salts, supplemented with carotene, calciferol, synthetic B_1 and riboflavin, rats developed skin lesions in 4 to 5 weeks; an acute dermatitis when restricted to the basal diet; and a chronic form, "rat-acrodynia", when given fat supplements at subcurative levels. Cures were produced with ½ drop of wheat germ oil, corn oil or Wesson oil, 10 drops of cocoanut oil or 25 drops of butterfat. The lesions were neither prevented nor cured with hydrogenated cocoanut oil.

METABOLISM ON A LOW-PROTEIN DIET. Three college students were given a moderately low protein diet providing 45 calories per kg. Meat furnished 85% of the protein. A considerable variation in retention of nitrogen, calcium and phosphorus was noted. Levels of 92 and 97% of the commonly accepted standards of 0.68 gm. calcium and 1.32 gm. phosphorus per kg. were not sufficient to prevent loss.

METABOLISM ON A MEDIUM-PROTEIN DIET. A constant diet furnishing 1.2 gm. protein (87.7% from beef) and 40 to 45 calories per kg. enabled 4 adult young women to maintain a positive balance for nitrogen and phosphorus during 45 consecutive balance days. No subjects were in positive calcium balance, though improved retention over a low-protein study was noted. A medium-protein diet produces a better utilization of nitrogen, calcium and phosphorus in human subjects than a low-protein diet.

ASCORBIC ACID CONTENT OF CERTIFIED MILK. The ascorbic acid content of certified raw milk from Guernsey and Holstein cows showed seasonal variation. The average ascorbic acid content of Guernsey milk varied from 17.76 mg. to 23.37 mg. and for Holstein milk from 15.72 mg. to 20.44 mg. per liter. The variation in the ascorbic acid content of raw certified milk produced under commercial conditions is independent of ration and period of lactation. The generous consumption of raw certified milk can contribute materially to the vitamin C content of the human dietary.

Journal of Pediatrics

Vol. 14, February 1939

*Studies in the use of crystalline vitamin C in the prophylaxis and treatment of infantile scurvy and some other disorders of infancy and childhood. A. S. Kenney and M. Rapoport.—p. 161.

CRYSTALLINE VITAMIN C. Pain in the legs is the usual clinical manifestation of scurvy. The amount of ascorbic acid utilized to effect clinical healing varied from 100 to 500 mg. daily. From 25 to 50 mg. daily is a maintenance dose. Vitamin C is essential to normal hematopoiesis and is probably a factor essential to the integrity of the capillary wall. Crystalline vitamin C seemed to stimulate wound healing in an infant operated upon for pyloric stenosis. Complete case histories of 3 scorbutic infants treated with crystalline vitamin C are given.

Journal of the American Dental Association

Vol. 26, February 1939

A salivary factor which influences the growth of L. acidophilus and is an expression of susceptibility or resistance to dental caries. T. J. Hill.—p. 239.

Journal of the American Medical Association

Vol. 112, February 4, 1939

*Alcoholic cirrhosis of liver. C. L. Connor.—p. 387.
*Relationship between nicotinic acid and a codehydrogenase (cozymase) in the blood of pellagrins and normal persons. R. W. Vilter, S. P. Vilter and T. D. Spies.—p. 420.

ALCOHOLIC CIRRHOSIS OF LIVER. Complete or partial starvation plus the continuous use of large amounts of alcohol produces fatty livers from which the patients may succumb before cirrhosis develops. A diet containing some but an insufficient amount of carbohydrates and vitamins, plus large amounts of alcohol habitually, may prolong the time of development of cirrhosis by years. It is doubtful whether a chronic alcoholic who eats a diet adequate in protein, fat, carbohydrate and vitamins, will develop cirrhosis.

PELLAGRA. The blood of normal persons on well balanced diets supports growth of *B. influenzae* to a much greater extent than the blood of pellagrins on diets deficient in the pellagra-preventive factor. After nicotinic acid therapy, the blood of these pellagrins increased to normal growth-promoting activity. Riboflavin is beneficial to certain pellagrins in relapse. A liberal and well balanced diet is recommended in the treatment of pellagra.

Minnesota Medicine

Vol. 22, February 1939

*Polyneuritis in children. R. E. Cutts.—p. 89.

POLYNEURITIS IN CHILDREN. Metallic poisoning accounts for a considerable proportion of polyneuritis cases in children. Lead, arsenic and bismuth are the most common offenders. Dietary deficiencies are capable of causing neuritis. Neuritic symptoms may result from restricted therapeutic diets used for gastrointestinal disease, food allergy and the ketogenic diet, if no allowance is made for an adequate vitamin intake. Since vitamin B_1 is now available in pure concentrated form, information should soon be available concerning its use in polyneuritis.

Nebraska State Medical Journal

Vol. 24, February 1939

*Deficiency and nutritional disorders in the etiology and treatment of cardiac disease. F. W. Niehaus and W. D. Wright.—p. 4.

CARDIAC DISEASE. Undernutrition may be a factor in cardiovascular disease. Low-protein diets cause edema and an impoverished blood. Deficiency of vitamin C causes capillary damage which permits easy exit of the blood from the capillaries. Anemia prevents adequate nutrition of the myocardium.

Philippine Journal of Science

Vol. 67, October 1938

*The nutrition of Filipino student officers. I. E. Villanueva.—p. 111.

NUTRITION OF FILIPINO STUDENT OFFICERS. A 7-day dietary study was made of the food served Filipino student officers at the Reserve Officers Service School at Camp Henry T. Allen, Baguio. There were 174 individuals of various body weights, with an average weight of 55.4 kg. Ages ranged from 22 to 46 years. The average individual intake per day was as follows: 169 gm. protein, 177 gm. fat, 522 gm. carbohydrate, 23 gm. ash, and a fuel value of 4404 calories. It is recommended that more milk be used.

Public Health Reports

Vol. 54, February 10, 1939

*Mottled enamel in South Dakota. H. T. Dean, E Elvove and R. F. Poston.—p. 212.

MOTTLED ENAMEL. There are 41 communities in South Dakota where endemic mottled enamel has been demonstrated by survey. The endemicity is seemingly limited to the smaller communities and rural districts where the inhabitants obtain their domestic water from the Dakota sandstone.

INSTITUTION MANAGEMENT

The American Restaurant Magazine

Vol. 22, January 1939

Modernization review for 1939.—p. 24.
*Stepping up your service for 1939. R. Billings.—p. 33.
*Six of the many ways to save profit. G. L. Wenzel.—p. 34.
*A will and the one way. J. Bailey.—p. 36.
*A customer builder. M B. Strause.—p. 39.
*Streamlining menus for 1939. L. D. Freeman.—p. 40.
*How we meet our operating cost problems. M. J. Harding.—p. 43.

STEPPING UP SERVICE. Employee placement to avoid skilled help doing unskilled work, promotion of interest in the business by taking department heads into confidence about conduct and profitable operation, timing, budgets, and step-saving devices contribute to lower operating costs without impairing quality or speed of service.

SAVE PROFIT. Complete formula recording system; a system of yields and portion costs; standardization of portion sizes by use of all items in chart form; compilation of a set of specifications for meat cuts, fruits, vegetables, fish and canned products to secure greatest yield at least expense; setting up "receiving charts" showing proper net weights, measurements, sizes or counts of items received are solutions to the chef, cost, portion, market price, buying, and receiving problems.

WILL AND WAY. Successful restaurant operation and expansion by Chapman's Tea Room, Grand Island, Nebraska, attributed to cleanliness, food quality, women cooks, style of cooking, service, comfort, use of leftovers, and seasoning.

CUSTOMER BUILDER. Two ways of making pineapple whipped cream pie with emphasis on merchandising pies and their value as appetite appeal items.

STREAMLINING MENUS. "Ordinary foods cooked extraordinarily well" is the key to this article that offers suggestions for securing variety and menu appeal as practiced by Cooley's Cupboards, Evanston, Illinois.

OVERHEAD COSTS. Detailed description of methods employed to reduce 45% food cost to 39.5% without raising prices, cutting portions, or deviating on quality.

Buildings and Building Management

Vol. 39, January 1939

*Profits from management.—p. 31.
*Depreciation schedule (tabulation).—p. 32.
Management organization (chart).—p. 33.
*Operating statement (form).—p. 40.
*Percentage lease facts. F. S. Slosson.—p. 41.
Percentages for rent (tabulation).—p. 42.
*Tested cleaning methods.—p. 44.
*Heating cost records.—p. 48.
*Economical heating.—p. 51.
*Modern lighting standards.—p. 53.
*Air-conditioning costs. R. W. Evans.—p. 57.
Elevator service data.—p. 60.
*Job cost summary (form).—p. 63.
*Decorating fundamentals.—p. 64.
*Paint terminology.—p. 68.
*Toilet room maintenance.—p. 70.

Vol. 39, February 1939

*Stop-loss modernization.—p. 18.
Trends in decorating.—p. 24.
Education and training of employees. A. Pomn.—p. 30.
*Money-saving partitions. H. F. Jones.—p. 31.

PROFITS. Increased ownership by leading institutions has enlarged opportunities for agency management. Adherence to strict code of ethics, thorough knowledge of best management practices in all details of work, and specialized knowledge of certain type of properties are fundamental requirements of an agency. General requirements include knowledge of economic and social trends, analysis of neighborhood and market trends, knowledge of business cycles and their effect on real estate values, local population shifts, property analysis, unit operation costs, development and analysis of property management programs, ability to create and execute property budgets, and fundamentals of property maintenance.

DEPRECIATION SCHEDULE. A schedule for 6 groups of equipment based on cost, useful life, and salvage, showing economical life years and per cent annual depreciation. Buildings have a life span of 12–50 years; depreciation is inversely proportional—8⅓%–2%. Building appurtenances last 12–50 years with depreciation of 8⅓–2% annually. Mechanical equip-

ment has an average life of 15–20 years with a depreciation of 6⅔–5%. (Elevators, electric lighting, refrigeration, laundry, and lighting fixtures are included here.) Power and steam plant equipment may last only 5 years, as in fixed parts of stokers, but usually last 13–20 years with depreciation of 7½–5% annually. Furniture and fixtures last 5–13 years, depreciating 20–7½% annually. Miscellaneous equipment, including vacuum cleaners, meters, etc., last 10–20 years, depreciation being 10–5%. The average depreciation for all equipment is 7½%.

Operating Form Statement. A simple, concise operating statement form showing each major department, and break-down of departmental costs. Current month is listed against the corresponding month of the previous year and increases or decreases recorded specifically. Included on the form are the building, city and date, plus columns for the account, its number, columns for 2 years, and increase and decrease columns.

Percentage Lease Facts. The percentage lease is a legal business development of the straight lease form of contract between tenant and landlord expanded to include participation of the landlord in pro rata measure of rental payment as applied to his tenant's annual volume of retail business. The length of the lease is a business problem—a short lease favors the owner whereas the 5-year lease is the shortest term justifiable for the merchant. There are two forms of percentage lease: with and without annual minimum guarantee.

Tested Cleaning Methods. Cleaning is the largest single item in office building operating costs requiring the services of more employees than all other tasks. The number of workers required is based on statistics compiled from other buildings as to average cleaning production of workers. Unit cost studies based on daily record sheets are valuable. Specialization of tasks is desirable for speed and efficiency. Modern equipment results in better cleaning performance and lower cost. Close supervision by personal inspection and records acts as a check on cleaning costs and employee efficiency. Floor cleaning methods for marble, terrazzo and ceramic tile should consist of nightly mopping and periodic scrubbing. Production should be 1000–1250 sq. ft. per man hour. Other cleaning practices for toilet rooms, lighting fixtures, windows, exteriors, and basements are outlined. Employees should be responsible for the care of all tools used for cleaning. Employee production averages are presented: cleaning coverage is about 5000 sq. ft. of rentable space per worker; charwomen average 1000–1250 sq. ft. per hr.; porters average 15,000 sq. ft. of rentable area per man. Women are used for general office cleaning. In allotting time, the use of a pace-setter for determining performance time is valuable.

Heating Cost Records. Actual records of cost and knowledge of factors making up cost of heat are important. A daily heating record has been prepared which includes: days of month and corresponding days of week in same month; columns for actual pounds of steam or fuel used during the day; time steam turned on and off hours during which heat is supplied; the mean temperature; the mean and normal temperatures; the noted degree days. Daily operation should be graphed and the economy of the system determined and regulated.

Economical Heating. Heat regulation is maintained efficiently by reducing the amount of heat losses, limiting hours of heating to those in which a required temperature is necessary, and regulating the amount of heat so as to prevent overheating during hours of occupancy. The heating system must provide good distribution quickly and thoroughly. The main source of heat loss is glass (5 times as great as that through wall surface), but this can be cut in half by use of outside windows. Proper roof insulation and the use of weather stripping to prevent infiltration of cold air saves 11–34% in consumption of steam. Ventilation must be considered. Amount of steam required depends on heat conductivity of outer walls and the difference in temperature between the building and the outside air. Heat can be limited by intermittent heating, but thermostatic control is more efficient.

Modern Lighting Standards. Better lighting increases rental appeal. Intensities, uniform light distribution, elimination of glare and provision of proper reflecting surfaces are

recommended and charted. Desk work requires 15–20 foot candles where corridors require only 5. Shallow bowl-shaped overhead fixtures are most effective for diffused lighting in offices; 75 sq. ft. floor area is allowed for 1 ceiling fixture. Lighting and decorations are closely allied to wall and ceiling surfaces which should be flat white to reflect the most light. Acoustic ceilings require 25–30% additional wattage in lamps. Light loss due to dirty fixtures is avoidable. Superior quality lamps are the best buy and should be burned at the voltage for which they were designed to obtain maximum efficiency. The wiring system should be adjusted to fit the demands made on it. Flood lighting is becoming an attractive advertising feature.

AIR-CONDITIONING COSTS. In apartment houses no outdoor duct is needed for ventilation; temperature and humidity can be regulated by automatic control; cooling services should be available from a central point with service lines planned to result in a marked reduction in air-conditioning investment cost. Typical cost studies provide means of determining owning and operating costs per year.

JOB COST SUMMARY FORM. A form for direct comparison of actual and estimated costs for the purpose of avoiding discrepancies between advance estimates and actual expenditures on jobs. Provision is made for date of issue and completion, description of work, classification, estimated and actual costs of labor and materials, and the date the materials were used.

DECORATING FUNDAMENTALS. A decorating program should preserve and protect the building as a profitable investment over a period of years. Too frequent redecorating with inferior materials lessens the life of finished surfaces. Proper specifications defining the standards of decorating materials, workmanship, and procedure are essential. Contracts must cover price, terms, and date for completion. Specifications include space to be decorated, surfaces, character and extent of surface preparations, character of finish, number of coats, etc., colors, and brand of materials to be used. Supervision involves selection of dependable contractors, specifies the work to be done, and supervision to prevent misunderstandings.

PAINT TERMINOLOGY. Describes the progressive drying stages of paint and varnish; characteristics of paints before use; and appearance characteristics of freshly dried paint.

TOILET ROOM MAINTENANCE. Modern toilet rooms are easy and inexpensive to maintain. Noteworthy present day preferences are: toilet bowls off the floor; access chamber arrangements; improved, strengthened flush valves—elbow valves recommended; combination fitting, and positive drain control; clean composition toilet seats which are inexpensive and practical; and washing facilities—high quality paper products and modern soap dispensers.

STOP-LOSS MODERNIZATION. A well-planned modernization program, including physical changes and subsequent rental program, has stopped deficits in the 148 State Street Building in Boston. The entrance, exterior, lobby, and elevators were important in the modernization program. Redecoration and improved appearance of toilet rooms essential.

MONEY-SAVING PARTITIONS. A 2-inch thick wall-board with cement and fibre surfacing on both sides over a filling of Celotex in sheets 4 by 8 ft. is a new, practical, low-cost and removable partition. Its floor-to-ceiling rigidity, flexibility of use, simplicity of construction and ease of installation make it a desirable partition for the modern office building.

Chain Store Age

Vol. 15, February 1939

*Show windows should show.—p. 10.
Driver training—key to safe trucking. O. R. Tyson.—p. 12.
Public opinion will aid chain store tax fight in 1939. J. A. Hartford.—p. 15.
Summary—board methods cut payroll accounting costs.—p. 22.

SHOW WINDOWS. Curved glass windows, newest innovation, return every reflection beyond range of vision with apparent absence of glass between observer and display. It is about 3 times as expensive as ordinary plate glass windows, but does not require frequent cleaning, is less apt to break, and, according to survey, attracts 6 times as many customers.

Consumers' Guide

Vol. 5, January 1939

Scotching health hazards.—p. 7.
*Researcher-in-chief to the American homemaker.—p. 11.
Keeping your consumer bookshelf up to date.—p. 16.
*Your food supplies and costs.—p. 18.

BUREAU OF HOME ECONOMICS. Outstanding in solving economic and technical problems of the family, the Bureau brings to the consumer data collected from exhaustive studies in foods and nutrition, textiles and clothing, housing and household equipment, as well as economics. Consumer purchases report, result of 3 years research, shows need for increased purchasing power of urban population, for more widespread education in nutrition and buying and resulted in publication of suggested diet expenditures at different income levels. Studies of food composition have been published, and mineral content research is still in progress. The Bureau has done extensive research on vitamins in food; is responsible for improved methods of food preparation and cookery, with development of many low-cost recipes; and has encouraged the consumer to read labels.

FOOD SUPPLIES AND COST. Steady downward trend in retail food costs continues, being 7% lower than a year ago; all food groups lower except eggs, fresh fruits and vegetables. Meat costs dropped 1.8% from October to November 1938.

The Horwath and Horwath Accountant

Vol. 19, February 1939

The trend over 11 years.—p. 2.
*According to Horwath and Horwath.—p. 2.
*Food and beverage costs.—p. 3.
*Summary of the trend of business in hotels for 1938.—p. 4.
*Trend of hotel room occupancies and rates.—p. 6.

FOOD COSTS. Ratio of food cost and payroll to sales in the various restaurants of a large department store.

FOOD COSTS. Food cost lower than same month in 1938. From 46% to 80% of hotels showed decreases in food costs and only minor changes in beverage cost per dollar sale.

TREND OF BUSINESS. Chart showing 1938 trend of business in hotels month by month for total sales, room sales, restaurant sales, room rate and occupancy.

TREND OF OCCUPANCY. Graph showing how room sales, occupancy and rates have moved during eleven years. The peak was only 70% of the available room occupancy capacity.

Hospital Management

Vol. 47, January 1939

*Diabetic dietary instruction for the medical student at the University of Chicago. D. Turner.—p. 34.
*Score card for food service.—p. 35.
*Canned foods offer menu variety. M. H. Martin.—p. 36.
Culinary literature.—p. 37.

MEDICAL STUDENT DIETARY INSTRUCTION. Actual practice in cookery and diet calculation of diabetic diets in small groups of two or three medical students has been successful. Thereafter the students instruct the patients and practice the knowledge obtained from the dietitian.

FOOD SERVICE SCORE-CARD. The Health Department in Washington, D. C., has established a score-card system for grading places serving food. The 7 points used as basis for scoring are: premise inspection; serving milk from original containers; obtaining oysters from approved sources; complete health reports of all employees (past illnesses and present health); bacterial determination of foods; discarding cracked china; and using approved silver cleaners.

CANNED FOODS OFFER MENU VARIETY. The nutritive value of canned foods is equal to that of the same foods prepared in any other way. Purchase good quality products and vary the monotony of menus by varying canned foods.

Hotel Management

Vol. 35, January 1939

*Management's merchandising calendar for 1939.—p. 10.
*Beverage check list for daily control.—p. 14.
*Decoration for hotels.—p. 22.
*Purchase, preparation, sale, display of avocados.—p. 37.

Vol. 35, February 1939

Boston Statler—kitchen research number.
*Here's a high speed kitchen.—p. 14.
*Standard meat portions.—p. 16.

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(In writing advertisers, please mention the journal.)

*We go to market.—p. 18.
*Introducing the Statler chef.—p. 24.
*Statler standard recipes.—p. 27.
*Menu variety for a week.—p. 34.
*Desserts for every occasion.—p. 36.
*Salads and sandwiches.—p. 38.
*Good ideas that reduce costs or save time.—p. 40.
*Dish sanitation practice.—p. 44.
*Inspection report—dishwashing machines.—p. 46.
*Temperatures for refrigeration.—p. 47.
*Food tests and standards.—p. 49.

MERCHANDISING CALENDAR. An easy to follow, interesting chart of all important days on which extra money can be made for restaurant and hotel operators.

BEVERAGE CHECK LIST. List of all equipment, supplies, furnishings, and exterior features including when these should be checked, cleaned, completed, counted, defrosted, dusted, refilled, laundered mopped, polished, rearranged, squeezed, ventilated, waxed, oiled and put in place.

HOTEL DECORATION. A group of seven articles on new ways of decoration and hints in decoration. Hotel Alexandria, Los Angeles, has set up specifications for redecorating rooms which include price of room, exposure, list of all furniture and fixtures with colors and material or quality to be used. Downs, Mohl and Company, Chicago, have set up a system of grading to show managers where the building falls short of perfection. Inspection of the hotels is made each month on unknown dates by 2 representatives, 1 for general check-up and 1 for vacancies checks. Report is made out and sent to the manager who makes comment and returns it. Each factor is given a number of points determined by its importance. The Drake Hotel, Chicago, using yellow curtains at the windows and white metal furniture with many flowers, transformed a dark and dreary lounge into a light, cheerful, and very popular place. Dark paint used around the door knob to prevent finger prints may be blended to conform with the decorations of the room.

AVOCADOS. This round or oval shaped, highly perishable fruit with butterlike flesh and large seed, smooth light green to purple skin with brown markings, and ranging in size from 4 oz. to several lb., was imported originally from Central America or the West Indies. Now grown in California (Calavo) or Florida. Winter calavo available from November 1 to May 15; summer calavo, with rougher exterior, grown in small quantities from March 15 to July 1. The 8 different sizes range from size 35 weighing 5¼ oz. to size 10 weighing 20⅓ oz. Sizes 35 and 30 used for half shell salads, 24, 20 and 16 used for à la carte service and 14, 12, and 10 for salad service. Sizes 16, 20, and 24 most popular among restaurants. Fruit packed in Florida in 12″ x 12″ box, 18-54 per crate. Calavo flats weigh 13 lb. net, regardless of size of fruit. "Eating softness" determined by pressure with palms of both hands; elastic stage, easily distinguishable, precedes softness. Softening hastened by leaving packed in excelsior in original container covered with damp cloth or paper at a temperature of 80–85°F. Refrigeration retards softening. Picked when firm, fruit requires storage of 3–10 days at room temperature to become properly ripe. Season of lowest price is December 1–April 30. Highly popular served as half shell alone, or with shrimp, crab, lobster, tuna, chicken, vegetables or fruit; or as a fruit cup, cocktail, garnish for meat, or hot entrée. Tart dressings add to flavor of fruit and prevent discoloration. Cut fruit should be protected with wax or metal foil. Trade name "Calavo," denotes high quality, carefully graded California avocado. The yellow stamp of Calavo Grower's Association protects public from low grade fruit, and means high keeping quality, texture and appearance. State law requires 8% fruit oil, association suggests 15% and average fruit contains 20–30%. Samples from orchards are subject to laboratory test to determine oil percentage.

HIGH SPEED KITCHEN. Complete floor plans of the Boston Statler Hotel main kitchen and lower floor preparation departments.

STANDARD PORTIONS. The Statler standard portion of porterhouse for 2 is 36 oz.; sirloin for 2, 24 oz.; sirloin minute, 10 oz.; venison steak, 8 oz.; lamb chop, 3 per lb.; veal steak, 8 oz.; lamb steak, 8 oz.; kidney lamb chop, 7 oz.; pork chop, 8 oz.; club steak, 9 oz.; T-bone steak for 2, 32 oz.; filet mignon, 8 oz. Illustrations of each portion are given.

TO MARKET. Valuable buying hints for high quality foods, including the fundamentals the

HOW WAS THE FIRST FOOD BOILER MADE? See Page 4*

DID NAPOLEON III USE ALUMINUM FOR: 1. PEN POINTS? 2. COOKING? 3. ARMAMENTS? OR TEETHING RINGS? See page 7*

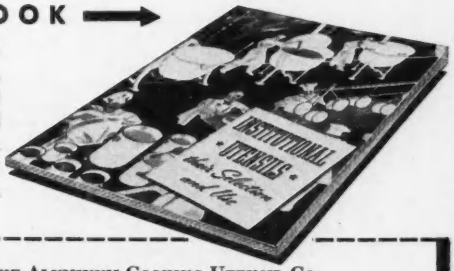
WHICH OF THESE FOODS CONTAIN THE MOST ALUMINUM SALTS: 1. BEEF? 2. WHEAT? 3. CABBAGE? 4. OR APPLES? See Page 8*

HOW CAN MEATS BE ROASTED IN A STEAM JACKETED KETTLE? See Page 18*

HOW CAN A STOCK POT BE MADE INTO A DOUBLE BOILER? See Page 17*

***SEND FOR THIS BOOK** →

To these and scores of other questions you will find the answers in the 24-page book, "Institutional Utensils, Their Selection and Use." It illustrates and explains uses of all commonly used Aluminum Cooking Utensils. An invaluable aid to dietitians, students and teachers. Send coupon for your free copy.



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I should like to have your book, "Institutional Utensils, Their Selection and Use."

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Statler stewards must keep in mind on daily market trips such as: how much is on hand, how long it will last, how much did we pay for it. Factors that govern the purchase of beef, lamb and mutton, pork, veal, poultry, fresh water and sea food products with standard weight tables for cuts and varieties and standards for purchasing milk and cream, butter, eggs, vegetables, fruits and groceries, are given. Points to consider in grading fruits and vegetables; how to take advantage of market opportunities; as well as an example of food cost reduction and a list of power equipment used with vivid illustrations of preparation processes make this article of value to every food manager and buyer.

THE STATLER CHEF. A clear picture of the manifold duties of a good hotel chef and how he performs each during the day, including a description of method of menu planning to 68% "fixed price" combinations and 32% à la carte dishes. Points to keep in mind when planning menus are flavor, appearance, balance, texture, temperature, guest preference, cost. Statler executives keep each food department head alert through a weekly mimeographed report entitled "Catering News".

STANDARD RECIPES. Statler standardized recipes for American cheese rolls, chocolate nut pudding, nutmeg sauce, steamed fig pudding, pecan rolls, apple Bavarian ginger pie, glazed apple slices, lemon meringue pie, and squash pie with candied ginger meringue presented with excellent illustrations.

MENU VARIETY. A detailed menu analysis for one week of Boston Statler plate luncheons and dinners in 3 dining rooms, and desserts, salads and sandwiches from the woman's department.

DESSERTS. Products made in the pastry shop, the bake shop, and kinds of ice cream manufactured by Boston Statler are listed. Standardized coffee making instructions and pictures of actual food preparation add to the value of this article.

SALADS AND SANDWICHES. Complete and detailed instructions to pantry girls, rules for sandwich making, standardized sandwich list with 25 combinations, and standardized salad list containing 24 combinations are given with additional pictures of food preparation and equipment.

REDUCE COSTS. Ideas illustrated include installation of pay telephones for employees; use of a portable wood sign to warn about slippery floors when mopping is in process; stainless steel garnish box to hold lemon slices, parsley and water cress; testing illumination with a light meter; heavy gauge galvanized cans plainly marked and fitted with truck and castor sets for keeping sugar and similar products; porcelain drinking fountains with circulating ice water for all working departments; and frequent Babcock tests made on cream to insure standard butterfat content.

DISH SANITATION. An account of dishwashing as performed at the Boston Statler includes directions for operating dishwashing machines and set-up covering inspection and cleaning of machines.

INSPECTION REPORT. Includes a copy of the biweekly inspection report used. Soiled and chipped dishes are caused principally by unbalanced tanks and sprays, improper operation of pump, loose belt or worn fibre, excessive or insufficient water supply, and improper temperature of water.

REFRIGERATION TEMPERATURES. Boston Statler refrigeration equipment consists of one 65-ton steam-driven compressor, one 15-ton steam-driven ammonia compressor, one 75-ton electric driven ammonia compressor. Descriptions of operation of compressors, refrigeration—which consists of 2 brine systems, and temperatures maintained in all refrigeration boxes are given.

TESTS AND STANDARDS. Examples showing the scientific methods used for food cost analysis and tests to determine buying accuracy.

Journal of Home Economics

Vol. 31, January 1939

*The home arts laboratory in the Chicago high schools. W. H. Johnson.—p. 1.
*Consumer education service. H. R. Howe.—p. 10.
Aspects of the housing problem—a symposium.—p. 14.
*Trade practice rules for the silk industry. M. S. Furry.—p. 34.

CANNED FOODS FOR INFANT AND EARLY CHILD FEEDING

● Milk is the basic article in the diet of the infant and young child. Breast milk is preferred for infant feeding. However, circumstances commonly require that other types of milk, properly formulated and supplemented, must be used.

Because of the wide range of digestive tolerance possessed by most infants the various types of formulas used routinely are usually tolerated by the majority of infants. But, in any group of infants started on a specific formula, there is always a certain number of "non-conformists." A recent study(1) has rationalized the problem of infant feeding by formula in the following statement:

> "More stress has been placed upon the various milks and their properties than on infants and their tolerance. Nutritional research has advanced sufficiently to adapt effectively the required type of milk to the individual infant rather than the infant to the milk."

Thus has been aptly expressed the trend in modern pediatrics towards the use of "individualized" rather than standardized formulas.

Because of many desirable properties such as its uniformity in composition and its physical properties after homogenization and heating—as well as its ready availability and economy—canned evaporated milk has been successfully used for many years in infant feeding. The value of such milk in some instances where individualized feeding is required has also been clearly indicated(1).

There appears to be no uniform agreement among pediatricians as to the exact time of life when other foods should be added to the milk diet. Nevertheless, it is agreed that early but judicious addition of properly prepared soups, cereals, fruits and vegetables is extremely desirable to increase mineral and vitamin intake and to improve gastrointestinal motility. The psychological value of the early addition of a variety of foods in the formation of proper dietary habits in later childhood is also recognized.

When other foods are to be added to the exclusive milk diet attention might well be directed to the long list of specially prepared canned infant foods. Such foods manufactured by closely controlled procedures from selected raw materials include a full line of soups, cereals, fruits, vegetables, and many food combinations.

The nutritive values of these canned infant foods have been established not only by studies in the laboratory(2), but also by clinical researches(3, 4). Such foods—together with canned evaporated milk—provide reliable, economical and convenient means for formulation of diets for early child or infant feeding.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

(1) 1937. Am. J. Digestive Diseases Nutr. 4, 240.
(2)a. 1933. J. Am. Diet. Assn. 9, 295
b 1934. J. Nutrition 8, 449.
(2)c. 1936. Ibid. 12, 405.
d. 1936. J. Am. Diet. Assn. 12, 231.
(3) 1932. J. Pediatrics 1, 749.
(4) 1938. Am. J. Diseases Children 55, 1158.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-seventh in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

(In writing advertisers, please mention the journal.)

Motion pictures, the department of justice, and the Neely bill.—p. 39.
*Conference of food service directors.—p. 40.

Vol. 31, February 1939

*The changing concept of the I. Q. B. L. Wellman.—p. 77.
*Household employment—a symposium.—p. 86.
Cost of attending Michigan State College. J. Hungerford.—p. 96.
Food problems of students who do light housekeeping. I. M. Haan.—p. 100.
*Budgetary allowances and expenditures among moderate-income families in Tucson, Arizona. E. Brooks.—p. 104.
*Comparison of food intakes for week-days and for Saturday and Sunday. R. M. Leverton and A. G. Marsh.—p. 111.

HOME ARTS LABORATORY. Chicago high schools have introduced a home laboratory course to provide freshman girls with guidance and training that will enable them to fit into the business and industrial world. The pupil's home background is studied and the equipment is suited to her needs. The course adheres to modern educational theories of socialized procedures, visual aids, and manipulative processes. Fundamental units from which the course evolves are: preparation and serving of food, clothing, household procedures, personal grooming, and family relationships. Kitchens are planned in unit kitchen arrangements, sewing rooms are equipped with the type of machines the girls would find in their homes, and units are provided for reference libraries and displays.

CONSUMER EDUCATION SERVICE. The American Home Economics Association is sponsoring a publication that presents only the latest concepts of the consumer's position in our economic organization. Newsletters are issued in October, February, and May. For filing convenience subject matter is divided into 9 headings: new publications; news of government agencies; legislation; standards and standardization; grading and labeling; cooperatives; business trends, advertising and trade promotion, merchandising practices; consumer relations; and miscellaneous.

SILK TRADE RULES. The Federal Trade Commission has drawn up rules for the silk industry to prevent misrepresentation and other unfair or unethical business practices.

SCHOOL FEEDING. The 4th annual Conference of Food Service Directors, held in Rochester, New York, on November 4 and 5, devoted a major part of its program to the optimum nutrition of the child. Discussions included management, buying, selection of equipment, and educational possibilities of the school lunch. A committee was formed to increase interest in school feeding in sections of the country other than the northeastern area, which this group represented.

NEW CONCEPTS OF I. Q. Casts doubt on Binet's theory that intelligence is inborn, changeable only under exceptional circumstances, and unaffected by environment. The I. Q. may vary markedly from one time to another, as influenced by intellectual stimulation of environment, and there is little correlation between mother and child's I. Q. Intelligence tests are still the best single measure of mental ability at the time the test is given.

HOUSEHOLD EMPLOYMENT. Discusses W.P.A. Household Training Project, instigated to raise the status of household employment by extensive training in phases of the work, to find gainful employment for women on relief, to relieve dearth of competent household workers. Home economists can do much to improve the employer-employee relationship by putting facts before the public, making intelligent recommendations. Suggests household employment legislation improvement through careful formulation of suggested laws, with arguments to substantiate claims; raising the vocational standing of the occupation by education and training; developing objective standards for experience and skill; harmonizing employer's requirements with legal standards for desirable protection of employee.

FAMILY EXPENDITURE STUDY. Study of income expenditures of 35 moderate income families in Tucson, Arizona, indicates that the level of living differs from that on which the budget was based. They spent more than the theoretical allowance, were less well clothed, less adequately housed, more expensively but no more adequately fed. They enjoyed more personal and medical care. Recreation and entertainment were out of all proportion to budget allowance.

VITAMIN C BEVERAGE BASE . . .

. . . . . solves vitamin C administration problems

Proper Vitamin C administration presented great difficulty before the advent of V-C-B. Dietitians and medical authorities were confronted with the fact that vitamin C content of fresh fruits and vegetables varies widely with climate, length of growing season, species, and distribution and storage methods.

The vitamin C content and caloric value of V-C-B is standardized and constant—1000 International Units of vitamin C and 50 calories per ½ oz.—equivalent to about 4 oz. of fresh orange juice. Dissolved in 4 oz. of cold water, V-C-B makes a pleasant refreshing beverage furnishing the necessary amount of vitamin C to meet the daily requirement.

Test mixtures of 50% Vitamin C Beverage and 50% orange juice were kept in a refrigerator 24 hours. Fresh fruit flavor was retained and only 5% of total vitamin C content was lost.

Use of V-C-B not only assures proper vitamin C administration, but allows fruit to be squeesed the night before and stored in the refrigerator without appreciable loss of vitamin C content, at a saving of at least 30% over the cost of fresh fruit juice alone. Also makes a refreshing beverage for use in Liquid Diets, Restricted Diets, High Carbohydrate Diets, and Forcing Fluids. Send NOW for FREE sample.

V-C-B has been accepted by the Council on Foods of the American Medical Association with the statement:

"Vitamin C Beverage (V-C-B) contains approximately the same vitamin C and caloric content as fresh orange juice."

HILKER AND BLETSCH COMPANY
15-17-19 E. Pearl Street, Cincinnati, Ohio

Please send free of charge 3½ oz. can of V-C-B (makes 1 quart Vitamin C Beverage)

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"JULLICUM" is the newest rennet milk food; it is distinguished for flavor, simple method of preparation, low cost. Approximate cost, 4 cents to the pint milk.

Physicians and Dietitians appreciate the digestibility and food value of milk congealed by rennet.

Good flavor and portable quality increase enjoyment and permit more use of this important food.

Many nationally prominent hospitals use Jullicum regularly because of its simple method of mixing, lower cost and the excellent flavor of "JULLICUM" desserts.

Almond	Butterscotch
Caramel	Chocolate
Coffee	Orange
Raspberry	Vanilla

Sherry Wine (New Flavor)
Plain Unflavored

Price $1.25 the pint
1 dozen to the case
Any assortment
Express or freight prepaid

SAM'L B. KIRK
1724 Cayuga St. Philadelphia, Pa.

Plain Jullicum, formerly Shinn-Kirk Liquid Rennet, is the oldest Rennet product in America; it has been sold by the Drug and Fancy Grocery trades since 1857.

STUDENT FOOD INTAKES. Results of balance studies on calcium and nitrogen intake of 24 college women on self-chosen diets clearly indicate that food and mineral intake differs markedly between week-days and week-ends (21.3% difference for nitrogen, 27.9% for calcium). One calendar week is the smallest time unit for such a study in order to obtain representative data.

Modern Hospital

Vol. 52, February 1939

*Reducing the "waste line". M. D. Floyd.—p. 92.
*Employees' health service. L. Wilkenson.—p. 96.

REDUCING THE "WASTE LINE". How the food waste is controlled at the Massachusetts General Hospital. Tables showing food waste before and after the dietary department took over this problem. Marion Floyd believes this system checks on careless menu planning, preparation, food service and encourages watching patients' likes and dislikes.

EMPLOYEES HEALTH SERVICE. An outline of the complete medical service given the employees of the dietary department at the Barnes Hospital, St. Louis.

The Nation's Schools

Vol. 23, February 1939

Educating women as women. E F. Barnard.—p. 18.
Consider this country school. N. J. Radder.—p. 28.
Color in functional school design. M. Orr-Rosa.—p. 35.
*Cleaning painted surfaces. K. P. Grabarkiewicz.—p. 45.
*Two lunchroom layouts. M. de G. Bryan.—p. 64.
*Health program centers on food. E. S. Milner.—p. 68.

CLEANING. Explains the method and tools required to wash painted walls and ceilings. Tools necessary for the procedure are 2 sponges, 2 pails, 1 with the cleaning solution and the other with clear water, a folding scaffold and a dry cloth. The washer is also advised to wear rubber gloves with a turn-back cuff. The rinse water, at 65°F. should be changed frequently. It is advised to start near the floor, working upwards and to lap over into the cleaned areas far enough to prevent border marks.

LUNCHROOM LAYOUTS. The second in the series of lunchroom layouts shows plans for the kitchen and lunchroom for the consolidated school at Fort Ann, New York, and a similar school at South Kartwright, New York.

HEALTH PROGRAM. The results of careful checks on weights and measurements of the Greensboro school children prove that their health program is valuable. Correct habits of sleep, rest, outdoor exercise, cleanliness, etc. are taught in relationship to food selection. The values of milk, fruits, and vegetables were emphasized in class and the improvement in selections in the cafeteria was soon noticed. Social training received during meal time carries over into the home.

Occupations

Vol. 17, February 1939

*Vocational information conferences at Ohio State University. G. S. M. Zorbaugh.—p. 413.
*Book guidance: reviews of recent publications.—p. 467.

VOCATIONAL INFORMATION CONFERENCES. Ohio State University has an effective undergraduate service institution—"Vocational Information Conferences for Women". There are 4 conferences during the year. The fall conference surveys opportunities for women college graduates. Personal interviews, speeches, and employer-student clinics are sponsored. Winter conferences deal with the field of labor and social service. Two spring conferences are known as "Summer Opportunities Conferences". Three objectives to offset the tendency to drift into gainful occupation offering only temporary advantages are: encouraging students to view possibilities of field from avocational angle, and developing opportunities for Christmas and summer employment. Vocational and avocational information serves as a basis of student's subsequent self-guidance. General student support has increased from 20% in 1933–34 to 45% in 1937–38.

BOOK GUIDANCE. *Social Life and Personality* penetrates the outer shell of social processes and approaches problems of personality in their interactions in social life. The units of the book deal with personality development, the nature and problems of major social institutions and problems of social control and adjustment. *1938 Mental Measurement Yearbook* describes all paper and pencil tests published in the United States and Great Britain within the past 3

CAREER TOURS HEADQUARTERS

THIS YEAR, more than ever before, the American Woman's Club will be the undisputed center for career women. The Clubhouse will be headquarters of the Career Tours, arranged in cooperation with the New York World's Fair and sponsored by 32 national, local and city business and professional women's organizations. The more than 130 Career Tours will take women visitors "back-stage" in the centers of interest of every profession.

Why don't you join them? You'll have the benefit of contact with kindred spirits as well as the other advantages the Club offers: convenient location, near smart shops, theatres, galleries, all transportation lines . . . light, airy, outside rooms, all charmingly furnished and all with private bath . . . a completely equipped gym, good swimming pool, expert Body-Conditioning Department . . . social gaiety at dances, parties, lectures, concerts; a Solarium, a Garden Patio, and a hundred other facilities which only this Club has under one roof.

RATES DURING THE WORLD'S FAIR

Single room with private bath: $3.00, $3.50, $4.00, and $5.00.
Double room with double bed and private bath: $4.00.
Double room with twin beds and private bath: $5.00 and $6.00.
Double room with three beds and two baths: $8.00.

Send for Booklet D.

AMERICAN WOMAN'S CLUB

353 WEST 57th STREET NEW YORK, N. Y.

years, each test being criticized by 2 persons. The tests are conveniently classified into groups, such as measuring achievement in school subjects, attitudes and opinions, character and personality, and intelligence. *Scholastic, Economic, and Social Backgrounds of Unemployed Youth* is a report of a study of vocational experiences of an experimental group over a period of 12 years. Sociological background, physical and mental growth, medical history, and scholastic achievement are studied at each stage of development. The test group of 1360 persons were classified into 6 classes depending on employment status. Significant differences were found in ethnic origin, methods of seeking employment, employment during school years, and education beyond high school levels.

Personnel Journal

Vol. 17, January 1939

Wage policies and business cycles. E. R. Walker.—p. 249.
*Forty-four factors affecting efficiency.—p. 261.
Industrial psychology. K. C. Garrison.—p. 274.

FATIGUE FACTORS. The Industrial Health Research Board of England has classified the factors which induce or increase fatigue. The latest report summarizes findings of 20 years' study and includes saddle-back work curves, organized rest, light effects, hot and cold effects, heat and older men, lifting and carrying and overcoming monotony. Work on newest studies is in view for the current year.

Restaurant Management

Vol. 44, January 1939

*Where students dine in luxury. B. McIlroy.—p. 14.
Avocado study.—p. 21.
*Ewart's storeroom and food cost control system.—p. 26.
Management's recipe exchange.—p. 28.
Tomorrow's cafeteria today. —p. 30.
Waitress uniform style show. Illustrations.—p. 34.
Merchandising calendar for 1939.—p. 38.
Equipment news for January.—p. 69.

Vol. 44, February 1939

*Lord and Taylor's one arm fantasy.—p. 12.
*World's Fair prize contest.—p. 26.
*Cost finding chart—oranges, grapefruit and tangerines. —p. 28.
*Purchase, preparation, sale, display of citrus fruits.—p. 29.
*We have a "five star kitchen". G. Evans.—p. 32.
*Tacoma restaurants.—p. 34
*Tea room beauty.—p 38.
Your air-conditioning profit trends for 1939.—p. 40.

WHERE STUDENTS DINE. Article describes facilities for feeding students at Iowa State University. Floor plan of entire dining and serving units, sample menus and methods of service are given.

STOREROOM SYSTEM. One storeroom clerk handles all records in each unit and records incoming supplies and costs. Multicounter operators make their own extensions on portion sheets. The portions are ordered by consulting records of previous amounts used. The menus and orders are made on Friday. Detailed food cost reports are kept and used by all employees. Records and forms are shown.

ONE ARM FANTASY. A novel method for serving guests efficiently and rapidly has been initiated at Lord & Taylor's, New York. The guest sits in a chair having a tray on one arm, and is served by 3 different waitresses each with a specific duty: taking and transmitting the sandwich order, serving the sandwich order, and serving the dessert and beverage from a rolling cart. The kitchen receives the sandwich order by telephone, a runner delivers the order according to the number received by the telephoned order. Efficient service is the result of scientifically managed kitchen units and dining room traffic. The waitresses' appearance and the architectural features of the restaurant insure the attractiveness of the dining room. The article is a series of pictures portraying every detail of this new system.

WORLD'S FAIR CONTEST. The International Restaurant Conference is scheduled June 13–16 at the New York World's Fair. A contest conducted by leading restaurant associations offers the winner a free trip to the fair at the time of this restaurant conference. Award will be based on the best $1.00, 75¢, and 50¢ menus, each with a 40% food cost or less, based on local market prices and in line with specified prices for each course.

CITRUS COST STUDY. Florida Citrus Commission has published a cost finding chart for grapefruit, oranges, and tangerines. For oranges and tangerines, columns at the top of the chart give box counts and number of dozens of fruit per box. A single column on the left states the cost per box, quotations at 5¢ inter-

BRIGHTEN UP THE BREAKFAST TRAY *with* VARIETY in CEREALS!

● The General Foods man who calls on you is trained to be helpful on food problems. He is at your service.

A Suggestion That Comes From a Recent Patient

THE idea for this ad came from a patient who recently spent several months in a well-known hospital.

"Gosh," he said, "how hopefully I looked at the breakfast tray morning after morning, wondering if there was something different in the cereal bowl at last. I began to think there must be only one cereal in the whole world! Believe me, you can get pretty tired of one cereal in a month's time!"

Here's the best answer to this common complaint: Serve variety in cereals!

HERE'S VARIETY...LOTS OF IT!

Here is the famous line of Post Cereals, kept crispy fresh in moisture-proof cellophane: GRAPE-NUTS—A real change, different in texture, made from wheat and barley. GRAPE-NUTS FLAKES—Same delicious flavor, popular new form. POST TOASTIES—crisp, oven-toasted corn flakes—one of America's most popular cereals. HUSKIES—Whole Wheat flakes rich in vitamins A, B_1, E and G. Also two bran cereals, POST'S 40% BRAN FLAKES and WHOLE BRAN SHREDS for bulk in the diet when needed. Latter is usually given under the direction of a physician.

A Suggestion for SERVICE

Try using the handy *individual* packages of Post Cereals—*really* fresh because they're cellophane-wrapped. Each package contains the right amount for one patient . . . Takes just a jiffy to serve!

GENERAL FOODS
INSTITUTION DEPT. C.
250 PARK AVE. NEW YORK, N. Y.

POST CEREALS

PRODUCTS OF GENERAL FOODS

● Other General Foods Products include: Jell-O—Jell-O Puddings—Postum—Baker's Chocolate and Cocoa—Maxwell House Coffee—Minute Tapioca.

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vals. All other columns tell the cost per dozen according to the box count and cost. Grapefruit prices are given in cost per box and then cost per individual fruit rather than in dozens.

CITRUS FRUIT STUDIES. Wholesome, plentiful, profitable, citrus fruits present every reason for appearing on intelligently planned menus. Valuable data on grapefruit, kumquats, lemons, limes, and oranges are given. Outlines concern season, uses, selection, varieties, market units, storage, methods of preparation and serving, and interesting recipes.

FIVE STAR KITCHEN. Murphy's Restaurant in Denver proves the value of careful organization. Kitchen has adequate ventilation, sterilized dishwashing, good lighting, stainless surfaces, and modern equipment. Employs women for most food production because they have a finer food sense and greater pride in their work. Departmentalization and convenient spacing of kitchen and serving units speed and improve service. A system whereby the guests sign their names and comment on the food suggests any necessary changes. Diagram of the kitchen plans accompanies the article.

SPEED INNS. Compact, modern kitchens attractive enough to display to guests at any time are typical of the Speed Inns on the highway near Tacoma, Washington. Counters in both restaurants are attractive as well as convenient from the standpoint of service.

TEA ROOM BEAUTY. Charm and individuality are as important as good food for tea room success. Furniture, china, glassware and silverware in the Thompson Tea Room, Clinton, Iowa, vie with those of a private home in type and beauty.

School Life

Vol. 24, February 1939

Training of camp educational advisers. H. W. Oxley.—p. 137.
The land-grant college as a research agency. J. W. Studebaker.—p. 139.
*Teaching aids for teachers. M. D. Davis.—p. 144.
*They train them and place them. C. M. Arthur.—p. 152.
*Cooperative houses.—p. 158.

TEACHING AIDS. Today's teachers find it increasingly difficult to keep pace with the modern educational demands for authentic materials that are interesting and appropriate for each age level. Article gives directory of government agencies and professional and noncommercial organizations from which materials may be obtained.

GIRLS' TRAINING COURSE. Springfield, Massachusetts, Trade School, provides a special division for training girls for wage-earning positions. Food and catering courses offer menu planning, marketing, food costs, accounting, meat and vegetable cookery, pastry cookery, and decorating.

COOPERATIVE HOUSES. Cooperative housing at the University of Texas reduces the cost of living to $17 per month. The 13 men's units and 2 women's units are estimated to save $25,000 for over 300 students annually.

The Science Leaflet

Vol. 12, January 1939

*Developing American glass. A. L. Day.—p. 14.

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*Notes on housing. O. Williams.—p. 2.
*Developing American glass (cont.). A. L. Day.—p. 14.
*Architectural acoustics. G. B. Welch.—p. 25.

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*Some household textiles. E. C. Ishler —p. 23.

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Eat lots of calcium; offspring will live longer.—p. 7.
*Softening baby-milk.—p. 9.
Household textiles (cont.). E. C. Ishler.—p. 35.

AMERICAN GLASS. American glass was first made in 1608. The composition of glass today remains the same. The simplest type is molten silica (sand) with a low expansion unit and transparent to all visible wave-lengths and ultraviolet rays. Commercial glass is silica with a flux of about 26% alkali to reduce melting point and increase handling ease. Clearness depends upon purity of ingredients. Soda-lime-silica is the simplest industrial glass. A new flux, borax and boric acid, makes the most stable glass. Case hardening, called tempering, is the dipping of hot glass into oil. The amount and exactness of tempering determines the strength of glass.

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Cleaner-Cleanser, H. D. C.—
Wash your dishes—leave no spot—
The merry cleaners of WYANDOTTE

HERE they are—the whole Wyandotte dishwashing tribe in action at the same time! Of course, it's not an absolutely true picture, because only *one* Wyandotte cleaner is needed for one dishwashing situation.

But you can see that Wyandotte is prepared with a full line of efficient, economical culinary cleaners—one for every dishwashing operation—by hand or machine—in hard, medium or soft water.

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AIDS IN PURCHASING. A series of notes in outline form which include some specifications, buying guides, and references for further information and study of: air-conditioning, stoves and ranges, coal ranges and gas combinations, kerosene stoves, electric ranges, refrigerators, domestic water heaters, ironing machines dishwashing machines, sewing machines, washing machines, winter heating and small household equipment.

AMERICAN GLASS. The continuation of the first article shows the strength and resiliency of American glass to be determined by enclosing a plastic of high transparency between two layers of glass. In this process no fragments of glass fly when broken. Some new uses for glass are insulation, distillation and filtration tanks, building blocks, and fabrics. Much will be done in future development of its use in fabrics.

ARCHITECTURAL ACOUSTICS. The solution of acoustical problems is complex. The most successful systems are planned before building. The principles are now so well explained it is almost inexcusable to have a defect. A platform for speakers with a wall behind the platform, the rear seats of the room raised and a wide shallow room are best for speaking. This lessens the absorption of sound waves by the audience. Reverberation should be as low as possible for speaking, but greater for music. The absorption coefficients of practically all building materials are now known. Materials with large pores are more effective in absorbing low pitches and sounds. If the reverberation period is too short speech and music seem dull. Clearness in enunciation is an important factor.

TEXTILES. Studies conducted by the Bureau of Home Economics on sheets based decision on weight and thread count of warp and filling. The Bureau recommends a heavy weight muslin for institution use. Specifications suggested to manufacturers for label content are: thread count, breaking strength, length and width of the sheet. Bath towels were judged on a basis of ply of warp and ends. Two-ply ground warp and single-ply ends seemed to score the highest in the washing tests given to the towels.

BABY FEEDING. The former method of baby feeding, that of diluting cow's milk with lactose, water, and added fat, is being discouraged. Research conducted at Ohio State University shows that cow's milk under such conditions forms hard tough masses in the baby's stomach and causes colic. By treating cow's milk with zeolite, an easily digestible soft curd is formed which resembles the curd produced from human milk.

"The more carbohydrates in the diet, the greater the amount of vitamin B_1 that must be ingested." *

*Taub, Vitamin Manual

AS EVERY DOCTOR KNOWS, CHILDREN LOVE TO EAT FOODS LIKE THESE

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ALL HIGH IN CARBOHYDRATES... LOW IN VITAMIN B_1

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Ralston helps compensate for high carbohydrate diets by supplying EXTRA quantities of vitamin B_1

One serving of Ralston, the hot wheat cereal children love to eat, supplies 45 International Units of vitamin B_1—about ½ of a full day's requirement. A serving costs less than 1¢—the easy, economical way to supply adequate vitamin B_1 regularly.

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2 times richer in vitamin B_1 than natural whole wheat

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Please send me a copy of your Research Laboratory Report, and samples of Ralston, the wheat cereal which is "double rich" in vitamin B_1.

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NEWS NOTES

American Dietetic Association, Annual Meeting, Los Angeles, August 27–31. Many prominent speakers have accepted invitations to appear on the program. Among the list of acceptances appear the names of Dr. Agnes Fay Morgan, head of the Division of Home Economics, University of California; Dr. Albert H. Rowe, noted authority on allergy; Dr. Jennie I. Rowntree, professor of nutrition, University of Washington; and Dr. E. Neige Todhunter, associate professor of nutrition, State College of Washington.

The program of group dinners so enthusiastically received at the Milwaukee meeting will be repeated at the Los Angeles session. Requests have already come in representing the following special interests: dietitians in children's, mental, small, and large hospitals; dietitians teaching nutrition to medical and dental students; dietitians and nutritionists engaged in public health and welfare work; dietitians engaged as consultants and in private clinics; and dietitians in college food service and school lunchrooms. Other suggestions for special group meetings should be sent to the program chairman, Mary Northrop, King County Hospital System, Seattle, Washington.

Because of the many points of interest in Los Angeles, no formal program has been arranged for Tuesday night so that members may visit places of interest such as Chinatown, Olvera Street (a bit of Old Mexico), the Cocoanut Grove, and the night clubs of the city.

The annual banquet promises to be outstanding. This year it will be in the form of a Spanish Fiesta with strolling musicians and Spanish dancers to entertain. The Welcoming Luncheon will be held in the internationally known Cocoanut Grove.

A most unusual program of trips will be offered. One will cover the moving picture studios at Hollywood. Friday, a trip to Catalina Island will include a drive around the island, a ride on the glass bottom boat with views of the marine flora and fauna. A trip to San Diego may possibly include Tia Juana. Saturday will be devoted to a trip to Santa Barbara.

In advance of the meeting on Friday, August 25, visiting members of the American Dietetic Association will visit the Golden Gate Exposition at San Francisco. The Bay Section of the California Dietetic Association will be hostesses to members who plan to spend a day in San Francisco. This famous and fascinating city offers Chinatown, Fisherman's Wharf, Golden Gate Park, the Presidio, Twin Peaks, St. Francis Wood, Golden Gate Bridge and the Bay Bridge. A luncheon will be held at the Women's Club House on Treasure Island, that marvelous man-made bit of land on which a beautiful and notable collection of exhibition buildings has been erected. The following day, Saturday, may be devoted to seeing more of the exposition or San Francisco, or driving south to Los Angeles, or taking the daylight trip down the coast on the Streamliner.

The Ambassador Hotel, headquarters for the meeting, will send reservation cards to all members during the month of April and all are urged to send in their cards promptly in order to be assured of a room. Those who desire less expensive accommodations may obtain information by writing to the Ambassador Hotel.

The following schedule gives the rates, railroad, bus and air fares for the round trip to Los Angeles:

Fares For Round Trip to Los Angeles

	RAILROAD*	PULLMAN	BUS	AIR
Boston	$131.10	$16.05	$78.25	$286.56
New York	124.50	15.25	75.15	269.90
Philadelphia	123.10	14.70	74.00	261.26
Washington	118.40	14.70	73.75	251.54
Atlanta	92.65	11.30	62.65	201.60
New Orleans	73.30	7.35	56.25	193.63
Memphis	73.30	4.75	56.25	176.58
St. Louis	70.10	7.35	56.25	173.60
Chicago	74.00	8.75	60.30	189.00
Minneapolis	74.00	7.35	56.70	177.32
Denver	49.45	5.25	32.95	110.52
Seattle	46.20	4.50	36.00	113.26
Portland	42.60	4.50	32.40	97.38

* First class to Chicago, tourist from Chicago to Los Angeles.

Railroad fares this year are remarkably low and offer an opportunity to see the United

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***Exclusive Design of Edison Electric Fry Kettle Cuts Fat Consumption—Reduces Food Waste—Turns out Fried Food at a Profit.**

Install a New Edison Hotpoint Automatic Electric Fry Kettle and put temptation in your menus. Make an art of fried foods. Turn out crispy, golden-brown fried foods that would delight the most finicky chef.

It's all so easy with this remarkable Edison Fry Kettle. Edison's exclusive automatic Temperature Control maintains an even temperature for every frying operation—insures uniformly good results.

Begin now to serve better fried foods at lower cost. Write for full information.

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*Priced So Low You Can't Afford to be without it.
Accurate Temperature Control insures perfect fried foods with a minimum of watching.

STEAMLESS HOT FOOD STORAGE
Keeps Foods delightfully tasty and fresh. Adjustable temperature control governs amount of electric heat needed to keep foods at proper serving temperature.

End Costly Waste of Old Fashioned Steam Table

Edison Hotpoint's Electric Hot Food Storage Receptacles do away with the food waste caused by "cooking out" foods in old fashioned steam tables. They end the discomfort, uncertainty and expense of heat-waste.

The right temperature for every food is quickly selected—automatically maintained. No water. No steam. No pipes. No drains. No valves.

Put the Edison money-making Hot Food Storage Receptacles to work for you now. Write for information.

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States and visit the great expositions on the Pacific and Atlantic coasts as well as the annual meeting of the American Dietetic Association, at an amazingly low expense for railroad fare.

Finance Committee, A. D. A. Midyear Meeting, February 10, 1939. At the meeting held at the association's business office, the following members were present: Anna Tracy, president, Beula Becker Marble, president-elect, Mary I. Barber, Ella Marie Eck, Sarah Elkin Braun, treasurer, and Dorothy Lenfest, business manager.

The committee agreed that Workmen's Compensation Insurance be procured to cover employees in the business office; that allowances to the state associations for placements be discontinued; that the publication of the "Star" be omitted at the Los Angeles meeting; that another $1000 from the Life Membership Fund be invested in U. S. Savings Bonds; and that allowance be made for office expansion to provide for the future employment of a full-time staff member whose duties would be concerned with problems of education.

Golden Gate International Exposition. Treasure Island, new man-made World's Fair and airport island on San Francisco Bay, moved actively into both phases of its career during the California "winter" just past. On February 18 the $50,000,000 Golden Gate Exposition opened its doors for 20,000,000 anticipated visitors before it closes on December 2, 1939.

The Pan American Airways has moved its transpacific base to Treasure Island, received the China Clipper there after a scheduled flight from Hongkong, and accepted delivery of the first of the huge 74-passenger Boeing Clippers, the largest flying boats in the world, which will operate regularly from Treasure Island during the Western World's Fair. Thirty foreign nations, most of them in pavilions of distinctive national architecture, lend atmosphere to the 400 acres of the fair. Its buildings are of two types: a mystic, lovely "Pacific" architecture for the romanticists, blending ancient Mayan, Incan and Cambodian forms into new beauty; and another section of streamlined modernistic structures, separated from the others by lagoons. Both groups are framed within a lavish California garden setting which cost $1,500,000, and are glorified at night by illumination which makes wide use of the new "fluorescent tube" for unusual beauty in colored floodlighting.

American Home Economics Association. The thirty-second annual meeting will be held in San Antonio, Texas, June 20–23, 1939. Preparations for the program are under the general charge of Mrs. Katharine McFarland Ansley, executive secretary of the association. This year the first general session will be held in the Municipal Auditorium and will be open to the public. Another general meeting will consider "Newer Aids in Home Economics Education" such as films, radio broadcasts, and various discussion technics. Group meetings are being planned to cover the many interests in the home economics field: family relationships, family economics, housing and household management, food and nutrition, and textiles and clothing. The Gunter Hotel will be the headquarters except for student club representatives, who will convene at the Blue Bonnet.

This association, founded in 1908, now has over 12,000 members comprising 51 affiliated associations in the United States, Puerto Rico and Canada, and 1700 affiliated home economics student clubs in colleges and high schools.

Conference of Food Service Directors. Arrangements have been made for a meeting of the Conference at the Lord Baltimore Hotel, Baltimore, November 2–4, 1939. Alma Bering, president of the Maryland Dietetic Association and chief dietitian of the Sheppard and Enoch Pratt Hospital, Towson, Maryland, has been appointed publicity chairman for the meeting. Mary Faulkner is acting as local chairman, assisted by the following: Mr. O. E. Carter, executive secretary, Restaurant Association of Maryland, Baltimore; Alice Jané, chief dietitian, Spring Grove State Hospital, Catonsville, Maryland; Keturah Baldwin, business manager, American Home Economics Association, Washington, D. C., Katharine M. Ansley, executive secretary, American Home Economics Association, Washington; Marie Mount, director, Home Economics, College Park, Maryland; Edna Engle, principal, Girls' Vocational Training School, Baltimore; Florence Mather, Western High School, Baltimore; and Mr. John Clautice, Chamber of Commerce, Baltimore.

Further details of the meeting will appear in subsequent issues of the JOURNAL.

All This...

and research too?

For busy dietitians who find it difficult to fit "required reading" into an already crowded schedule, perhaps the "Vitex News" could be of help.

This little digest of current nutritional evidence appears at frequent intervals each year. It abstracts reports of current significance in the field of human nutrition.

Those who might find the "Vitex News" helpful in keeping up to date on the facts about human nutrition can receive future issues of the News simply by addressing a letter or postcard to Vitex Laboratories, Inc., Harrison, New Jersey.

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Postgraduate "Refresher" Courses for Dietitians. In line with the current interest in refresher courses for dietitians as initiated by the Massachusetts Dietetic Association in 1938, the University of Minnesota under the direction of Gertrude I. Thomas, director of nutrition, and the Maryland Dietetic Association under the direction of the chairman of the Diet Therapy Section, Betty Olson, presented recent programs.

The program at the University of Minnesota consisted of demonstration lectures, round table discussions, formal addresses and field trips. The opening demonstration by Miss Thomas presented the outline of a course in nutrition as offered by the School of Nursing at the University, together with references and an exhibit of books. This was followed by a demonstration of a class in practical dietetics together with a lesson plan by Nell Dahl, assistant dietitian, and Phyllis Redman, student dietitian; a routine pre-and-post operative diet using a minimum of fiber, by Helen Heberlee, assistant dietitian and Roberta Stinson, student dietitian; the low fiber diet as managed from the cart service on the corridor for a large number of patients on modified fiber intake, by Angeline Mannick, assistant dietitian, and Victoria Pearson, student dietitian; the selective service of food for young children, by Nell Dahl, pediatric dietitian, and Jean Finkenbinder, student dietitian; the beverage board central service of refreshments and supplementary food, by Elizabeth Ryan and Lorraine Frawley, assistant dietitians, and Adeline Paulson, student dietitian.

According to Miss Thomas the course was most successful with every speaker in attendance and nearly eighty persons registered from the states of Minnesota, Wisconsin, North Dakota, South Dakota, Iowa, Kansas, Indiana and Illinois. Among the papers presented were the following: "Changing Standards in the American Diet", Dr. A. E. Taylor; "Present Status of Vitamins", Professor Leroy S. Palmer; "Acceptance of Foods by the Council on Foods of the American Medical Association", Dr. Russell M. Wilder; "Teaching Nutrition to Nurses", Miss Thomas and Miss Dahl; "Special Diets", the Misses Frawley, Mannick, Heberlee and Dahl; "Dietary Needs in Childhood", Dr. Chester A. Stewart; "The Dietitian Looks Into the Future", Mrs. Beula B. Marble; "Low Fat Diet in Skin Disease", Dr. John Madden and Lorraine Frawley; "Vitamin Concentrates and Mineral Additions to the Diet", Mary A. Foley; "Low Potassium Diet in Addison's Disease", Sister Mary Victor; "Newer Aspects of Treatment of Diabetes", Bernard A. Watson; "Treatment of Allergy in Children", Dr. Albert V. Stoesser; "Treatment of Allergy in Adults", Dr. Louis E. Prickman; "The Dietitian in Research", Mrs. Marble; "China", Dr. John L. McKelvey; "Quantity Cookery", Mildred King; "Food Costs", Gustav A. Krueger; and "Personnel Selection", Mr. Howard P. Longstaff. The meeting closed with field trips to hospitals in the vicinity of Minneapolis.

The ever progressive Maryland Dietetic Association is not only keeping up its interest in radio broadcasts but this year planned a course of lectures by J. Ernestine Becker, of the Johns Hopkins University, which were designed to bring all in attendance up-to-date on aspects of nutrition. The lectures were presented during the month of March in the Phipps Clinic Amphitheatre and consisted of the following: two on "Minerals", one on "Carbohydrates, Proteins, and Fats", and two on "Vitamins". Those who registered for the course were given an opportunity to ask questions. Miss Becker, who holds a master's degree in biochemistry from Johns Hopkins University, is at present an associate in biochemistry under Dr. E. V. McCollum and has had extensive experience in the field of teaching as an instructor in the Nurses' Training School of Johns Hopkins Hospital and as director of the seminar on nutrition for all student dietitians of the hospital.

Correction. The figures concerning vitamin C on page 100 of the February JOURNAL should read: "Vitamin C—1200 I.U., 120 Sherman units or 60 milligrams ascorbic acid."

Drexel Institute of Technology, Philadelphia. A series of ten lectures on the subject "Current Problems in Food Consumption" is being presented at the Institute and is offered to home economists desiring advanced work toward degrees or credit for teachers' certificates. Lecturers include Mrs. Anna DePlanter Bowes, lecturer in nutrition at the University of Pennsylvania and director of nutritional education of the Philadelphia Child Health Society; three members of the staff of the United States Department of Agriculture—Charles M. Harris,

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CARBOHYDRATES. Our product is 77% carbohydrates. Milk is 5%.

PROTEIN. Our product is 10% protein. Milk is over 3%.

IRON. Our product is an excellent source, with .0034%. Milk has .0002%.

CALCIUM. Our product has .04%. Milk has .12%.

PHOSPHORUS. Our product has an excellent content, .42%. Milk has .09%.

VITAMIN B_1. Approximately 120 Sherman-Chase units in two biscuits. One cupful of milk adds approximately 77 Sherman-Chase units.

VITAMINS A AND G. Our product gives these vitamins in lesser quantities. Milk is rich in both of them.

ENERGY. In two biscuits and one cup of milk are approximately 370 calories.

Such a balance of nutritional essentials, we feel, makes our product a desirable dietary factor, both for children and adults. The wholesome flavor of National Biscuit Shredded Wheat can be used to encourage increased intake of milk, which, surveys show, is far below the nutritionally desirable level, while National Biscuit Shredded Wheat, unlike highly milled cereals, goes far toward supplementing certain important and widespread nutritional needs.

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Dr. Donald E. Montgomery, and Dr. Louise Stanley; three members of the faculty of Columbia University, Dr. Walter H. Eddy, Dr. Harold F. Clark, and Dr. Mary Swartz Rose; Dr. E. G. Nourse, director, Institute of Economics, the Brookings Institute; Sue E. Sadow, supervisor, Home Economics Unit, New York City Department of Welfare; Dr. Frank G. Boudreau, executive director, Milbank Memorial Fund; and Lila G. Hainer, assistant professor of Home Economics, Drexel Institute of Technology.

New Health Publications. The Metropolitan Life Insurance Company is distributing a completely revised edition of their pamphlet entitled "Protecting Your Heart". The material has been prepared with the cooperation and advice of the American Heart Association, Inc., and tells in simple language how the healthy heart works, the causes and symptoms of heart disease and some of the ways in which the physician determines the condition of the heart.

Another circular entitled "When You Are In Your Teens" has been prepared by the Committee on Nutrition of the Health Education Section of the Welfare Council of New York City, and while especially designed for growing boys and girls, it can be used by adults interested in this age group. Other new publications distributed by this company include "A New Day in Health Protection" detailing how the private physician and the nurse protect the public, and "Colds, Influenza, Pneumonia", an excellent summary of a most important problem.

Canadian Dietetic Association, through Claribel M. Hazlett, extends an invitation to members of the American Dietetic Association to attend their annual meeting June 16–17 at Bigwin Inn, Lake of Bays, Muskoka. Miss Hazlett will be pleased to give detailed information to all interested who write to her.

District of Columbia Dietetic Association. The annual round table discussion took place in February at the Continental Baking Company. Majorie Black of the National Canners Association, Home Economics Department, gave an interesting word picture of consumer relations in the food industry field. Mabel Ashenfelter, supervisor of the Welfare and Recreational Cafeterias of the Public Grounds and Buildings, talked on cafeteria equipment. Mrs. Elizabeth O. Grant, nutritionist for the Bureau of Maternal and Child Welfare, Health Department of the District of Columbia, described some phases of nutrition work in the field of public health.

At the annual banquet in March held at the Dodge Hotel, Ida Jean Kain, well known dietitian whose syndicated column, "Your Figure, Madame!", appears in newspapers all over the country, was the speaker.

Illinois Dietetic Association held a most successful meeting at the Manteno State Hospital, Manteno, Illinois, February 10–11. This is the third year that the state meeting has been held outside of Chicago, and proved to be the largest gathering of the association, founded eight years ago.

The program committee was fortunate in being able to have Anna Tracy, president, and Mrs. Beula Becker Marble, president-elect of the American Dietetic Association, as speakers. Adeline Wood, inspector of training courses, made interesting comments on the training of student dietitians. Harriet Barto, Home Economics Department, University of Illinois, presented some very entertaining facts concerning "Food Fads and Fallacies."

The State Department of Public Welfare contributed in a large measure to the very successful program. Dr. Hinton, managing officer of Manteno State Hospital, Mr. A. L. Bowen, director of the Illinois Department of Public Welfare, Mr. James Cox, fiscal supervisor, and Mrs. Gladys Frazier, W. P. A. diet project supervisor, told of various aspects of their work in the state institutions.

The scientific aspects of dietetics were introduced in two addresses. Dr. S. Maurer, University of Chicago, spoke on "The Site of Action of Four Water Soluble Vitamins", and Dr. C. I. Reed, University of Illinois, College of Medicine, contributed a paper on "Calcium and Phosphorus Metabolism."

A large number of exhibits added interest and were well attended.

An informal dinner on Friday evening was followed by a dance, both of which were very much enjoyed. Delightful musical entertainment was provided by an orchestra from the institution at both dinner and luncheon.

To Mrs. Christine Pensinger, food and textile

PUT THEM IN WHOLE . . .

Bananas Sliced in Gelatin

WHOLE BANANAS, molded in sparkling gelatin, ready to slice and serve! It's new, it's easy, and it adds a cheerful sparkle to spring and summer menus. Bananas combine well with all flavors . . . and add a delicious mellowness all their own. Vary your menus with this sparkling, nourishing dessert.

TAKE THEM OUT SLICED

Banana Gelatin Dessert

Prepare gelatin according to directions on package. Pour gelatin to a depth of ½ inch into a square or oblong pan (2 to 3 inches deep). Chill until firm. Peel ripe bananas* and arrange in lengthwise rows, allowing about ½ inch between each banana. Cover bananas with remaining gelatin. Chill until firm. Unmold on large tray. Cut into slices or squares. Garnish with sweetened whipped cream if desired.

**Ripe bananas . . . yellow peel flecked with brown*

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adviser, Department of Public Welfare, Mrs. Lillian C. Williams, dietitian at Manteno, and the other state dietitians, goes much of the credit for a very successful meeting.

Maryland Dietetic Association. The monthly meeting was held at the Red Cross Building February 13. A large number were in attendance. The Community Education Section, Mrs. Alice Lambert, chairman, arranged the program. The work done by organizations promoting nutritional education in the community was described as follows: "Department of Public Welfare" by Mrs. Ethel Gardner; "Department of Family Welfare" by Violet Lake; "School Cafeterias" by Mrs. Martha Blatz; "Baltimore County Home Demonstration Work" by Anna Trentham; "Red Cross Work" by Mrs. Alice Lambert. Low cost recipes were distributed.

Dr. George R. Minot spoke before an audience of 300 at the Johns Hopkins School of Hygiene February 14 on "Some Aspects of the Etiology, Diagnosis and Treatment of the Anemias." The association was invited to attend a lecture on "Anemia" given by Dr. M. M. Wintrobe of the Johns Hopkins staff who spoke on February 9 at the Phipps Clinic. Both lectures were of great interest to all who attended.

J. Ernestine Becker, associate of Dr. E. V. McCollum of the School of Hygiene and Public Health, gave a series of five lectures on "Recent Advances in Nutrition" during March. Her first two lectures covered "Minerals", the third "Carbohydrates, Proteins, and Fats", and the last two, "Vitamins". These lectures were given under the auspices of the Maryland Dietetic Association.

The Community Education Section began their series of eight radio broadcasts over station WBAL on February 15 at 1.45 p.m. Mrs. Alice Lambert, chairman of this section, gave the first broadcast on "The Importance of Nutrition." On February 23 the broadcast "Fats, Carbohydrates, and Calories" was given jointly by Ruth Graham and Helen Nelson. The six other broadcasts were given on Thursdays during March at 1.45 p.m.

Massachusetts Dietetic Association. At the January meeting of the association, Mr. Edward F. Bodley of the Jones, McDuffee and Stratton Corporation, gave an illustrated talk on the production and distribution of Onondago Pottery.

Alice F. Blood recently participated in a panel discussion on "The Place of Home Economics in General Education" at a general meeting of the New England Home Economics Association.

Quindara Oliver Dodge attended the midwinter executive board meeting of the Food Service Directors' Conference in January at the Hotel Commodore, New York City, to discuss plans for the annual meeting in Baltimore next fall. The program promises to be outstanding in scope and interest for administrative dietitians. On February 14, Mrs. Dodge spoke at the University of New Hampshire on the vocation day's program. Her subject was "Opportunities in Institution Management and Dietetics."

Opal Bowers, assistant director of the Vocational Training Department, Women's Educational and Industrial Union, and supervisor of vocational practice, Simmons College, has been elected president of the Employees' Association of the Union for the coming year. The 1938–1939 group of administrative student dietitians at the Union have begun their assignments at the Dartmouth College Dining Halls, Hanover, New Hampshire, and also at the Wellesley College Dining Halls at Wellesley, Massachusetts. Last year's students report the following positions: R. Virginia Cline, junior assistant at Bamburger's Restaurant, Newark, N. J. (in charge of cold station, salads and desserts) in main kitchen; Jane Giesler, instructor in home economics and assistant dietitian at Drexel Institute, Philadelphia; Augusta M. Holmes, dietitian, Mary Mayo Hall, Michigan State College, East Lansing; Mary Demmler Stockton, assistant dietitian, Carothers Dormitory, University of Texas, Austin; Margaret Synnestvedt, assistant dietitian, in charge of Claflin Hall Kitchen, Wellesley College; and Marian E. Wishart in charge of cafeteria counter, Thayer Hall, Dartmouth College, Hanover, New Hampshire.

Bertha Shapleigh Burke collaborated with Dr. Harold Teel and Ruth Draper on a paper entitled "Vitamin C in Human Pregnancy and Lactation" which appeared in the *American Journal of Diseases of Children*, November, 1938.

Emma Wetherbee, Massachusetts Depart-

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Scummy, greasy, discolored aluminumware is dirty aluminumware; it is unsanitary, unhealthy, objectionable and unpardonable—because PRONTO prevents such conditions.

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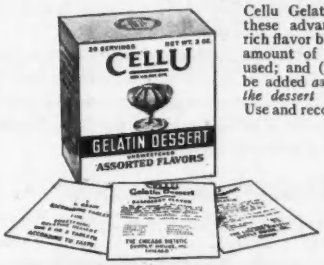

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ment of Public Health, is taking the course for public health nutritionists which the University of Chicago offers jointly with the Illinois Department of Public Health and other health agencies in Chicago.

On February 17, Marjorie Heseltine, specialist in nutrition, Children's Bureau, was the guest of honor at a dinner arranged by the Social Welfare and Public Health Section of the New England Home Economics Association.

New Jersey Dietetic Association held its annual party at the Essex House, Newark, Tuesday evening, February 21. Chinese checker games and prizes for the winners proved a delightful diversion and were followed by a program of Hawaiian music and typical Hawaiian dances presented by a trio of entertainers. A supper was served in the form of an old fashioned box lunch and the red, white and blue colorings of the boxes and decorations provided a patriotic background. The program was in charge of Juanita Trapp and Annette Zelzer, assisted by Harriet Stone and Sophia Morris, president of the association.

Greater New York Dietetic Association. Dr. Walter B. Cannon, George Higginson professor of physiology at Harvard Medical School, delivered the association's annual address at the New York Academy of Medicine on the evening of February 13, 1939. Prior to the meeting, the president, Elizabeth Cole, and officers of the association entertained Dr. Cannon and a number of invited guests at a dinner at the Hotel Shelton. Among those attending the dinner were Dr. Eugene Du Bois, Dr. Mary Swartz Rose Dr. Grace MacLeod Dr. Paul Reznikoff, Dr. Clyde Schumann, and Mrs. Mary Huddleson. The vice-president of the association, Eleanora Sense, introduced Dr. Cannon, who was greeted by an audience which filled Hoosac Hall, in which the meeting was held.

Alta Atkinson, chairman of the Administration Section, arranged a "Panel Discussion" on problems relating to personnel management for presentation at the February 27 meeting held in the Red Cross Building, New York City. Dr. Mary de Garmo Bryan of Teachers College led the discussion with the following participating: Kate Lewis, employment manager, The Namm Store, Brooklyn; Laura Smith, personnel division, American Telephone and Telegraph Company; Mr. Edgar C. Hayhow superintendent, Paterson General Hospital; Ward L. Luther, personnel officer, Presbyterian Hospital; Elizabeth Rupert, chief dietitian, Hackensack Hospital; and Elizabeth Rugh, chief dietitian, Veterans Administration. Miss Atkinson had planned the discussion under two heads: the selection of the employee, and the responsibility of the institution to the employee. There was a general feeling of agreement in the group, made up of personnel directors and department heads in industry and in the hospital, with regard to raising the present level of labor standards within the hospital, and that many of the principles of personnel management that have worked satisfactorily in industry could be practised to advantage in the hospital.

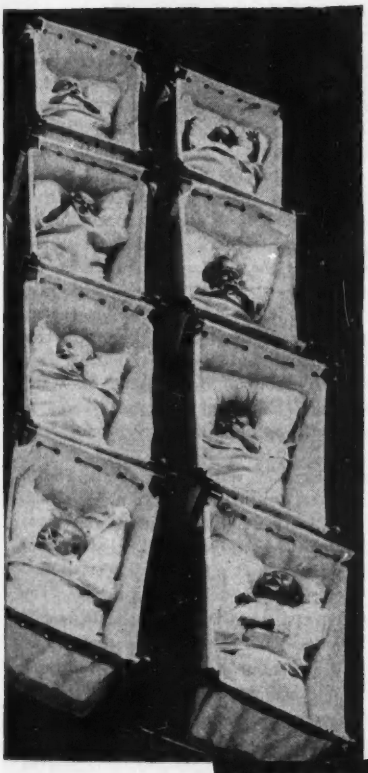
Northwest Dietetic Convention. This group met jointly with the Association of Western Hospitals in Seattle, February 20–21, 1939. At the opening session at Harborview Hall, Jennie I. Rowntree, professor in the School of Home Economics, University of Washington, presiding, the following program was presented: "Report of School Lunchroom Survey Committee", Ruth Walker, supervisor of lunchrooms in elementary and junior high schools, Seattle; "Report of School Lunchroom Studies in Oregon", Vivian Roberts, instructor in foods and nutrition, Oregon State College; and "The Contribution of the W.P.A. to the School Lunchroom Program", Helen Dwinnell, Washington State Director of Women's and Professional Projects Division of W.P.A.

At the luncheon held at the Women's University Club, Frances M. Croker, dietitian, St. Vincent's Hospital, Portland, presiding, the program was as follows: "Greetings", Mr. A. C. Jensen, president of the Association of Western Hospitals; and "Coordinating Health Activities" Ethel Mealy, director of education for the Oregon State Board of Health.

At the general session following, E. Neige Todhunter presiding, the program continued with Dr. Rolph Loe, Seattle, who spoke on "Gastroscopy"; and Margaret L. Fincke, associate professor of foods and nutrition, Oregon State College, who discussed "Practical Phases of the Newer Work on the Vitamin B Complex".

Accidental Discovery

Gelatinized Milk DECREASES INCIDENCE OF UPPER RESPIRATORY INFECTIONS IN INFANTS



Many a useful discovery has resulted from a chance finding by a keen observer.

Two years ago a group of university workers fed milk containing 1 and 2% plain, unflavored gelatine to a group of infants. There was a lower incidence of vomiting, diarrhea, and constipation than in control groups. As a corollary, they noticed that those receiving the gelatine formula suffered fewer upper respiratory infections. This was interesting enough to demand further study. The work* was recently repeated in two different clinics and the results substantiated. Knox Gelatine (U.S.P.) was used. It is 100% pure U.S.P. Gelatine—85% protein—in an easily digestible form—contains no sugar and should not be confused with factory-flavored, sugar-laden dessert powders.

*Further Clinical Observations on Feeding Infants Whole Milk, Gelatinized Milk, and Acidified Milk. C. Loring Joslin, M.D., F.A.A.P.; Bulletin of the School of Medicine, University of Maryland; Jan. 1939.

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At the informal dinner meeting, held at the University of Washington Commons, Jessamine C. Williams, professor of foods, Oregon State College, presided and Dr. Frederick B. Joy, Seattle, spoke on "Trends in Infant Feeding".

At the Tuesday morning general session, Melissa Hunter, director of the Commons, Oregon State College, presiding, the following program was presented: "Training the Student Dietitian and Opportunities for Her", Margaret Ritchie, head of the Department of Home Economics, University of Idaho; "Labor Problems", Otto Hartwig, personnel director, Crown Zellerbach Paper Company, Portland; and "Food Control Applied to the Veterans' Home of California", Alice Thayer, dietitian, Veterans' Home, Napa County, California.

At the luncheon held at the Washington Athletic Club, Dr. Martha E. Davis, Department of Home Economics, University of California, presiding, Dr. Ira A. Manville, University of Oregon Medical School, discussed "Apple Therapy".

At the joint session with the Association of Western Hospitals, held at the Olympic Hotel, the following groups took part: Nursing Section, Medical Social Workers' Section, Dietitians' Section, and Volunteer Workers' Section. Henrietta M. Adams, education director, University of Washington School of Nursing, Harborview Division, was chairman. A play entitled "Our Patients Don't Need It" was presented by players from the Federal Theatre Project, followed by an "Impromptu Health Council" led by Sylvia Allper, with Eleanor Ketchum and Ruth Burcham discussing.

In the afternoon the Dietetic Section of the Association of Western Hospitals met with Martha E. Davis, Department of Home Economics, University of California, as chairman. The subject, "The Personal and Professional Qualification Necessary for Success to the Administrative Dietitian", was discussed by the following speakers: Mr. Arthur J. Will, executive superintendent, Olive View Sanatorium, Los Angeles; and Katherine Bielby, dietitian, Latter Day Saints' Hospital, Salt Lake City. "The Cost and Recompense in Achieving Better Trained Administrative Dietitians" was discussed by Mr. A. C. Jensen, president of the Association of Western Hospitals; Margaret E. Terrell, business director of Dining Hall and Residences, Department of Home Economics, University of Washington; and Dr. Malcolm T. MacEachern, associate director, American College of Surgeons.

Philadelphia Dietetic Association held a joint meeting with the Philadelphia Dairy Council on February 15 with K. G. Weckel, Ph.D., as speaker. His topic was "Recent Nutrition Research in the Dairy Industry".

On February 28 the Special Diet Committee, with Frances L. Swenson, therapeutic dietitian, Mount Sinai Hospital, as chairman, conducted an interesting and instructive diet therapy meeting. The following program was presented which pointedly emphasized the scope of the members' interest in the field of diet therapy: "Celiac Disease", Mary W. Steinman, student dietitian, Pennsylvania Hospital; "Addison's Disease", Betty Jean Brewer, staff dietitian, Presbyterian Hospital; "Lead Poisoning", Clara M. Bream, student dietitian, Philadelphia General Hospital; "Very Low-Fat, Very High-Carbohydrate Diets in the Treatment of Diabetes", Vera Kerstell, student dietitian, Philadelphia General Hospital; "Diets in the Treatment of Obesity", Katherine Kephart, staff dietitian, Jefferson Hospital; "The Dietary Treatment in Tetany and Rickets", Claire Foster, research nutritionist, Children's Hospital; "The Vitamin B_1 Content of Ward, House and Therapeutic Diets", Frances L. Swenson, therapeutic dietitian, Mount Sinai Hospital.

The Association was invited by the Fourth Annual Post Graduate Institute of the Philadelphia County Medical Society, which was held March 13–17, to conduct an educational exhibit featuring the adequate normal diet. The discussion topic of the Institute was "The Blood Dyscrasias and the Metabolic Diseases". All hospitals and agencies cooperated by sending experienced dietitians to answer questions and maintain the booth. Catherine Roess, therapeutic dietitian, Jefferson Hospital, was chairman of the Exhibit Committee. Several members of the association attended the dinner held during the institute at which Dr. James S. McLester was the guest speaker.

"Building Health Through Food", by Frances Livingston Hoag, nutritionist, Philadelphia Interstate Dairy Council, was published in *The Nation's Schools* for October 1938. It is a

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comparison of modern American school lunches with those of eighteenth century England.

Mr. and Mrs. Thomas Wisen (nee Marian Bell) are the parents of a son born February 9.

The second issue of "Know News" (news bulletin of the association) is just off the press.

South Carolina Dietitic Association. The second annual meeting of the association was held jointly with the twenty-fifth annual meeting of the South Carolina Home Economics Association at the Jefferson Hotel, Columbia, February 24–25. At the opening session on February 24 with the state president Edna V. Ward presiding, the program consisted of the business meeting with reports of officers and the following papers: "The Reacting Individual", Dr. F. M. Routh, State Department of Health; "Diets in Pellagra", Dr. O. B. Mayer; and "Selection and Care of Meats for Institutional Use", Mr. Horace Eason, Meat Department, University of South Carolina Cafeterias. On February 25 the two associations held a joint session with Miss Ward and Ada M. Moser, president of the Home Economics Association, presiding. The following papers were presented: "The School Lunchroom", Anna M. Tracy, president, American Dietetic Association, Florida State College for Women, Tallahassee; "Cooperation between the Home Economics Association and the Dietetic Association" Mrs. Katharine M. Ansley, executive secretary, American Home Economics Association, Washington, D. C. A discussion followed on the subject of "The Place of Home Economics in General Education" with Dr. LeRoy Bowman, forum leader and director, South Carolina Public Forum, Extension Division, University of South Carolina, as leader. Following this program the dietetic association convened for a round table discussion with Celia P. Swecker, chairman of the program committee presiding, and Anna M. Tracy as leader.

Texas Dietetic Association. The Dallas Dietetic Association met at Stoneleigh Court for their February meeting. Two representatives of the Better Business Bureau of Dallas discussed the ethics of merchandising. A number of gadgets which had been sold under false pretenses, were shown. A moving picture of "Frosted Birdseye Foods" was then shown by the A. W. Cullum Company who handles this type of product.

Mary E. Foley of the Mayo Clinic and Daisy Ellithorpe of Worall Hospital, Rochester, were guests of Rose Ritcher of the Methodist Hospital while en route to Mexico for a vacation.

Mary Francis Miller, now dietitian at the Y. W. C. A. residence, Houston, was formerly foods service secretary at the Y. W. C. A., Ashville, N. C.

Frances Kornfeld is now dietitian at St. Joseph's Infirmary, Houston. She received her student training at Johns Hopkins Hospital.

The monthly meeting of the South Texas Dietetic Association was held at Hermann Hospital, Houston, with Mamie Ruth Harris and Gertrude Samson as hostesses. Tony Bracher was program chairman for this meeting and introduced Mr. W. C. Prowse of Huey-Philp Company who spoke on "China as a Hobby".

The annual convention of the Texas Dietetic Association was held in Austin March 24–25. Mrs. Beula Becker Marble, president-elect of the American Dietetic Association, appeared on the program as the guest of the South Texas Dietetic Association. Each year the South Texas group gives a benefit dinner known as "The Feast of Five Tables" to secure funds to bring a speaker to the state convention. Rosalie Godfrey of Austin was program chairman for the meeting.

News from Advertisers and Exhibitors. Gerber Products Company announces a new dry pre-cooked cereal for infant feeding developed with the aid of pediatrician and nutrition experts. According to Dr. Lillian B. Storms, director of the firm's department of nutrition "it was thought desirable to enrich the cereal with additional vitamin B_1 and iron because the average infant's diet is apt to be low in these two important elements." Calcium and phosphorus have also been added in a form that permits their assimilation by the average infant. Gerber's cereal as well as their line of canned strained soups and vegetables has been accepted by the Council on Foods of the American Medical Association.

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WHO'S WHO IN THIS ISSUE

Maurice B. Strauss, M.D., is instructor in medicine, Harvard Medical School, junior visiting physician, Boston City Hospital, and research fellow, Thorndike Memorial Laboratory, Boston, Massachusetts.

Horace Gray, M.D., is clinical professor of medicine at Stanford Hospital, Stanford University Medical School, San Francisco. **Dorothy E. Kallenbach,** B.S., is clinic dietitian in the same hospital.

Dwight L. Wilbur, M.D., is a graduate of the University of Pennsylvania and was formerly a fellow in medicine at the Mayo Clinic from 1929–1931, following which he was consulting physician at the Mayo Clinic and instructor and assistant professor of medicine in the Graduate School of the University of Minnesota. Since 1937 Dr. Wilbur has been associated with the Stanford University Medical School where he holds the title of associate clinical professor of medicine. His special medical interests are diseases of the gastro-intestinal tract and the relation of vitamins to nutrition. He is a member of the American Gastro-Enterological Association, the American Society for Clinical Investigation and a fellow of the American College of Physicians.

Grace M. Augustine, Ph.D., was noted under this section for May 1938, at the time her paper "Labor Policies in Hospitals" was published. Dr. Augustine is now associate professor and head of the Institution Management Division of the Home Economics Department and house director of Residence Halls, Texas State College for Women, Denton.

Mary I. Barber was among the first of the home economists to leave the field of teaching for business. Before going to the Kellogg Company, Battle Creek, Michigan, to organize a Home Economics Department, she was an instructor in foods and cookery at Teachers College, New York City. Previously, she taught in Philadelphia and was a hospital dietitian. While living in New York Miss Barber wrote a column for the New York *Evening Post* and contributed articles to several of the leading women's magazines. For the last eight years she has been pantry editor for *Child Life Magazine.* Miss Barber has been active in both of her professional organizations, the American Dietetic Association and the American Home Economics Association. She is a former member of the Executive Board and at present is a member of the Finance Committee of the American Dietetic Association. **Katherine Hope Gordon** is a graduate of Battle Creek College and an active member of the American Dietetic Association. Following graduation she joined the Home Economics Staff of the Kellogg Company, where she remained until January 1, 1939, when she accepted a position with the Consumers Power Company of Pontiac, Michigan. While at Kellogg's, she was in charge of recipe testing and writing. The article on this subject grew out of the realization of the need for standardized forms, both to make testing easier and to facilitate printing. Miss Gordon has analyzed thousands of recipe offerings from consumers, from dietitians and even mess sergeants throughout the country. In formulating rules for recipe writing she has selected the most practical points from a variety of sources.